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**The Queen Bee in New Zealand:
The Role of Group Commitment in Group-Distancing Behaviour**

A thesis
submitted in partial fulfilment
of the requirements for the degree
of
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(Organisational)**
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Abstract

Considering the plethora of barriers that women face in the pursuit of leadership and success as leaders, it is valuable to gain an in-depth understanding of each specific obstacle that women leaders face. In this vein, the present research strives to investigate the Queen Bee (QB) phenomenon—a term assigned to women leaders who distance themselves from their female subordinates and juniors, rather than helping them achieve leadership themselves. More specifically, this research aims to investigate the relationship between Queen Bee behaviours and an individual's connection and commitment to their gender group—a concept termed Gender Identification (GID) here. As a secondary aim, this study also endeavours to explore the relationship between several measures used to assess QB attitudes.

Participants were recruited from the University of Waikato's Practical Research Experience in Psychology (PREP) program, with 39 participants providing valid responses on all measures. Participants were mostly young (71.1% under 20 years old) psychology students, and mostly female (76%). They undertook an experimental in-person 1-hour session replicated from a previous study which consisted of a simulated management scenario where participants were tasked with helping a subordinate (either the male or female candidate) gain promotion. This measure indexed a behavioural assessment of QB group-distancing behaviour, and a self-report questionnaire was also included to measure participants' explicit QB distancing attitudes.

Regression analysis revealed that, contrary to hypotheses, stronger GID predicted the favouring of the same-gender candidate and distancing from the candidate of opposite gender in both male and female participants, although this relationship did not reach statistical significance. Further, correlation analysis

revealed, as expected, no correlation between the implicit (behavioural) and explicit (self-report) measures of QB distancing. The results suggest that the relationship between GID and QB distancing, in both men and women, is more nuanced than reported in previous research. Specifically, low gender-group connection and commitment may result in a nothing-to-lose mentality, sparking more engagement in radical collective action (such as favouring women over men at work), whereas strong GID may result in concerns of how such collective action will reflect poorly on the gender group. Further, the results indicate that explicit and implicit measures of QB distancing may relate poorly to each other, suggesting caution be taken when using these different types of measures interchangeably or comparing data across studies. The research highlights that further studies of a replicative nature are necessary in psychology, and that further research concerning the QB phenomenon in New Zealand women is necessary to understand the engagement with these distancing behaviours among our women leaders.

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Chapter One: Introduction

Women's representation and their subsequent success in leadership and executive roles has grown exponentially over the last century, in both political and business contexts. While in 1950 less than 35 percent of women participated in the labour force and made up only 30 percent of the labour force overall (Toossi & Morisi, 2017), women's status in business and leadership has moved far beyond this bleak picture, with 75 percent of all businesses today operating with at least one woman in a senior management position, and 24 percent of senior roles being held by women (Grant Thornton, 2018). Furthermore, looking beyond the statistics it is clear that women have found great success in reaching the top levels of business and politics. Women such as Angela Merkel (Chancellor, Germany), Theresa May (Prime Minister, United Kingdom), Tsai Ing-wen (President, Taiwan), and Jacinda Ardern (Prime Minister, New Zealand) have found success in the highest positions of political leadership, whilst the likes of Sheryl Sandberg (COO, Facebook), Susan Wojcicki (CEO, Youtube), and Christine Lagarde (Managing director, International Monetary Fund) have achieved the highest levels of leadership in business (Forbes, 2017). Considering this, women's position in the labour market and in leadership roles within society has unequivocally improved when considering the last 100 years.

However, within the context of the last decade, women's status in leadership paints a very different picture. Women have historically faced discrimination and disadvantage in the workplace and continue to do so despite the progress that has been made toward gender equality. Considering that only 16.9% of Fortune 500 corporate board members in the United States are women (Ryan et al., 2016) and only one company in the NZX-50 (the index of New Zealand's largest 50 companies) is headed by a female CEO (Dann, 2017), it is

evident that women's presence in leadership and executive positions in business pales in comparison to that of men. Strategies such as gender equality policies have been employed in politics increasingly over the last twenty years (Paxton & Hughes, 2015; Turan, 2015; Young, 2013) as well as in the corporate sphere (Lee, 2014) to target this inequality. Despite these, the growth of women obtaining high level roles has stagnated, and despite the high levels of change between 1950 and today, women are still immensely underrepresented in leadership globally. For example, women make up no more than five percent of CEO positions across the publicly listed companies in the major stock exchanges worldwide, with the CAC 40 France and DAX 30 Germany reporting zero female CEOs amongst the member companies (ILO - Bureau for Employers' Activities, 2015). Furthermore, the proportion of senior roles held by women globally has fluctuated between only 22 percent and 25 percent between 2015 and 2018 (Grant Thornton, 2018), signalling that women continue to struggle to move beyond the threshold of 3:1 ratio of men to women within senior management in business. When we consider the representation of women specifically on company boards worldwide, 73.5 percent of companies have at least one woman on their board of directors, however this promising figure plummets to just 20 percent when regarding companies with at least three female directors (Lee, Marshall, Rallis, & Moscardi, 2015). Alarming, the best performing country in terms of percentage of board seats filled by women is Norway sitting at 40 percent, still a significant ten percent from reaching true gender equality (ILO - Bureau for Employers' Activities, 2015).

The climate regarding women's representation in leadership specifically within New Zealand can be considered mediocre at best, with progress being made toward gender equality, albeit very slow and unspectacular progress. The

appointment of Jacinda Ardern as New Zealand's third female Prime Minister thrust the country into the spotlight regarding women leaders, however the state of women's underrepresentation within the country as a whole remains bleak particularly in comparison to similar nations. According to the New Zealand Census of Women's Participation (New Zealand Human Rights Commission, 2012) the percentage of women on the boards of New Zealand's top 100 companies increased from 8.65 percent to 14.75 percent between 2008 and 2012, indicating that New Zealand business has yet to reach the 15 percent mark of women on boards and remain far below Norway's forty percent, ranking ninth of sixteen economically similar nations (p. 12). The census also reports, rather disturbingly, only 17 of these 100 companies have two female directors, and only nine have three or more women on their board (p. 47).

The bleak state of women's representation in leadership is consistent across the various industries in New Zealand, with banking, accounting, and law failing to reach 25 percent, and the judiciary achieving just 27 percent (New Zealand Human Rights Commission, 2012). Additionally, the progress across sectors leaves much to be desired, with growth of the proportion of female partners between 2010 and 2012 sitting at a lowly 0.76% and less than 3% in law and accounting respectively. This may be, in part, due to New Zealand's reluctance to implement and enforce gender quotas for women in directorships (Deloitte, 2015), and in fact employees are largely unaware of any diversity policies in place within their own organisations (Houkamau & Boxall, 2011). Unfortunately, despite perceptions that New Zealand is amongst the leading progressive countries in terms of women's representation in leadership, research shows that despite slow progress, New Zealand ranks below average in

comparison to structurally and economically similar nations, and the proportion of women in leadership across industries and sectors remains frighteningly low.

While some may perceive women's underrepresentation in leadership to be attributable to women's decreased ability to lead or success in leadership compared with men, this is simply not the case. In fact, extensive research has been conducted to examine the success of women leaders and their effect on organisational outputs and has found that companies with female leaders and directors perform better than firms with low gender diversity amongst their management teams. For example, significant positive relationships have been observed between the proportion of women in directorship roles and the organisations' return on equity (ROE) (Low, Roberts, & Whiting, 2015; Lückerath-Rovers, 2013) return on assets (ROA) (Carter, Simkins, & Simpson, 2003; Green & Homroy, 2018) return on sales (ROS) and invested capital (ROIS) (Lückerath-Rovers, 2013), and overall financial performance as measured by operating results and budget overrun (Opstrup & Villadsen, 2015). In addition, the relationship remained constant across the various industries of consumer discretionary and staples, financials, industrials, and information technology (Catalyst, 2011). Furthermore, looking beyond financial performance, a higher proportion of women on company boards appears to increase environmental strengths (Glass, Cook, & Ingersoll, 2016) and Environmental, Social, and Governance (ESG) scores of firms (Nadeem, Zaman, & Saleem, 2017), suggesting that women leaders promote company sustainability and environmental-friendliness, an organisational output garnering increased attention and significance. Unsurprisingly, several of these effects were dependent on female leaders being given the opportunity to take on responsibilities typical of top management teams and having power to make decisions (Lückerath-Rovers,

2013) and receiving support from their managing peers and boards of directors, especially from female boards members (Cook & Glass, 2015), indicating that when women are given the opportunity to lead and are supported, they excel at an equal level, and even higher, than men. Evidently, women are beyond capable of the same success as their male counterparts in leadership roles and this begs the question: Why, when gender equality is unquestionably beneficial, does the pervasive underrepresentation of women in leadership persist so stubbornly?

Barriers for Women in Leadership

The barriers that women pursuing leadership and women already within leadership positions face are pervasive, can be highly damaging for a woman's career, and hinder her work performance (Kaufman & Grace, 2011). Given the multi-faceted nature of women's struggle, Eagly and Carli (2007) assert that a labyrinth is a fitting metaphor for these career endeavours, as just as the labyrinth is characterised by the complexity of its obstacles and the persistence required to navigate, women pursuing leadership in their careers will find that "routes exist but are full of twists and turns, both unexpected and expected" (p. 3). In relation to these barriers, the enduring 'think manager – think male' perception was first posited by Schein and Davidson (1993) and has been found to persist across different countries (Schein, 2001), and this gendering of leadership can be seen as the foundation of discrimination that link these barriers.

These hurdles encumber women's success throughout different facets of professional and personal life and are perpetuated both systemically by societal norms and individually by specific organisations; consequently, each of these barriers share the fact that they add to women's struggle in leadership. This labyrinth-like experience is often characterised by women facing the stereotype that they are unfit to fill certain roles, wrestling to overcome the difficulties of

balancing work and family obligations and are at times forced to choose to pursue only one of these avenues, and only being granted the chance to lead in contexts characterised by scarce resources and high chances of failure (Ellemers, 2014). Further, women must navigate this labyrinth with a lack of mentoring or flexible working environment (Kalaitzi, Czabanowska, Fowler-Davis, & Brand, 2017), and even face discrimination from other, more successful women (Ellemers, 2014).

Stereotyping of gender and leaders and the way these interact present a double-edged sword for women in leadership. While women are perceived as warm and nurturing, leaders are understood to be agentic and display ambition, independence, and dominance in order to be successful (Brescoll, 2016). Contrarily, men are stereotypically perceived to be agentic, therefore the congruence between their gender stereotype and leader stereotypes results in men being seen as a better 'fit' for leadership compared to women. Specifically, a meta-analysis revealed that the stereotypical leader is distinctly masculine, a fact that remained constant across three different paradigms employed to understand the culture of leadership (Koenig, Eagly, Mitchell, & Ristikari, 2011). Moreover, research has demonstrated that individuals more easily encode and process the agentic traits stereotypical of leaders when the leader is a male, and find it more difficult regarding a woman leader, suggesting that women may be seen as female first and leader second automatically, without the knowledge or intention of the observer (Scott & Brown, 2006).

These stereotypes also dictate how women and men should behave (Heilman, 2001). For example, women are expected to be nurturing and warm towards others and exhibit minimal aggressiveness or assertiveness, while men are expected to be dominant and exhibit minimal vulnerability lest it be perceived

as weakness. While individuals are often judged harshly for acting in ways that violate the stereotypical norms of their gender, it becomes particularly salient in the leadership realm where women tend to be rejected for displaying agency rather than communality (Vial, Napier, & Brescoll, 2016). As a result, even when a woman displays the agency expected of successful leaders, she is still punished for the perception of bad fit owing to the prescription that leaders should be agentic while women should be communal (Heilman, 2012). Therefore, due to gender and leader stereotypes, whether women display the warmth expected of their gender, or the agency expected of leaders, they are often judged as unfit for leadership. The effect of these stereotype-based expectations can be immensely detrimental for women and present a significant obstacle, resulting in decreased performance, sense of belonging, and motivation to pursue leadership roles (Hoyt & Murphy, 2016).

An added challenge lies in that these stereotypes manifest both explicitly and implicitly, and while some discrimination remains overt and blatant, most instances of discrimination in the workplace are more subtle, and can be understood as “actions that are ambiguous in intent to harm, difficult to detect, low in intensity, and often unintentional but are nevertheless deleterious” (Jones, Peddie, Gilrane, King, & Gray, 2016, p. 1589). Women have reported experiencing this everyday sexism, also termed workplace incivility (Cortina, 2008), at least once or twice every week causing discomfort, anger, and decreased psychological wellbeing (Swim, Hyers, Cohen, & Ferguson, 2001). Examples of this incivility include general disrespect, condescension, and social exclusion (Cortina, Magley, Williams, & Langhout, 2001). Women tend to be associated with successful leaders explicitly (Duehr & Bono, 2006), and yet are implicitly associated with stereotypical teachers rather than engineers (White & White,

2006), family words rather than career words (Nosek, Banaji, & Greenwald, 2002), and communal traits rather than agentic traits (Rudman & Glick, 2001) and this implicit association between women and subordinate roles rather than authority roles continues to disadvantage women in leadership (Latu et al., 2011). The issue lies in the fact that the subtle and often unintentional discrimination stemming from implicit biases are potentially more damaging to women due to the frequent nature, and the difficulty in attributing the biases directly to an external source means that women are more likely to self-blame for the discrimination (Jones et al., 2016). Furthermore, the chronic yet subtle nature of implicit bias results in a disadvantage for women that is difficult to detect and therefore difficult to address and eliminate.

Perhaps the most unexpected barrier women face in leadership is the one perpetuated by other women. The expectation is that women should and will help other women progress in their careers (Derks, Ellemers, van Laar, & de Groot, 2011a)—an expectation perpetuated by the stereotypical assumption discussed earlier that women should be, and are, warm, nurturing, caring, and communal in the workplace. However, research has revealed that token women promoted into leadership positions may not advocate for the progression of other women or extend top-tier diversity and gender equality attitudes (Duguid, 2011; Garcia-Retamero & López-Zafra, 2006; Ng & Chiu, 2001), and often show no support towards junior women and their career goals (for a review, see Derks, Van Laar, & Ellemers, 2016). This phenomenon is related to an individual's response to group-based discrimination, and while collective strategies that benefit the group are an option, successful women often engage in individual-level strategies that distance her from her gender group, resulting in upwards mobility (Ellemers & Barreto, 2008). For example, female leaders have been observed to deny the

existence of gender discrimination in their organisation, reporting that the sacrifices made during their own careers catapulted them to success and makes them different from junior women (Faniko, Ellemers, Derks, & Lorenzi-Cioldi, 2017), and have expressed concern that junior women may underperform and reflect poorly on her leadership and elicit negative evaluations from her peers and superiors (Duguid, 2011). While the perception that women should always be helpful towards other women and should not show competitiveness is problematic and reproduces gender roles and stereotypes, it is clear that discrimination from this avenue is still an issue for women's success in leadership and therefore needs to be addressed. Exploring the way that certain women act as a barrier to other women's pursuit of leadership and investigating the mechanisms behind it is the central interest of this research.

The Queen Bee Phenomenon

The term 'Queen Bee' (QB) was first coined in relation to women and leadership by Staines, Tavis, and Jayaratne (1974) and was used to define and describe women that engage in behaviours to create distance between themselves and other women at work in order to find success in organisational contexts dominated by men and masculinity (as cited in Derks et al., 2016). Over the past few decades, the 'Queen Bee syndrome' has garnered interest, specifically with regards to examining the mechanisms that underlie this behaviour in senior women, analysing the consequences of the occurrence, and exploring potential strategies to address the issue. Originally, women engaging in the behaviours that have been identified as typical of Queen Bees were assumed to be directing hostility towards other women out of a competitiveness with one another (Cowan, Neighbors, DeLaMoreaux, & Behnke, 1998). However, more recent research has found that these behaviours are triggered in male-dominated settings where

women are devalued due to the incongruence of their gender role with the expected characteristics of a capable leader, and are a consequence of gender discrimination in the workplace rather than simply a source of discrimination (Derks et al., 2016).

The negative manner in which the ‘Queen Bee syndrome’ is spoken of in the mainstream media perpetuates the sexist and derogatory nature of this label assigned to senior women. For example, ‘Queen Bees’ have been described as making ‘little impact on workplace culture, because they are more likely to act like a man, pull up the web of opportunity so other women cannot climb it, and make male colleagues feel uptight’ (Horin, 2004), and Ellen Ham concludes a piece on women helping women with the advice ‘when all else fails, ladies, remember the sage words of our first female U.S. Secretary of State, Madeleine Albright: “There is a special place in hell for women who don’t help other women.”’ (Ham, 2018). Furthermore, Luongo (2002) proceeds to categorise senior women, asking women if they are familiar with ‘the Queen Bee who will sting if her power is threatened’, ‘the Old Guard whose purpose is to keep all new ideas out’, or ‘The Fortress Keeper who rules over her Fiefdom and keeps intruders out’. This construction of senior women engaging in supposedly negative behaviours reproduces the perception that female leaders should see other women as their own responsibility and should therefore provide support, rather than strive for their personal success (Mavin, 2008). The tendency for society to ostracise women for not engaging in solidarity behaviours and placing both the responsibility and blame on individual senior women reinforces the gendered context of leadership, and does nothing to address the unrealistic expectations of women leaders (Mavin, 2008). Understanding the ‘Queen Bee’ label through this lens helps to identify the inherent sexism of punishing driven,

successful women by labelling them as ‘bad eggs’, as male leaders who display competitiveness and fail to provide support for their male peers are appointed no such label or punishment.

Specifically, three behaviours have been identified as central to the Queen Bee phenomenon that help upwardly-mobile women assimilate into a male-dominated culture of an organisation. Firstly, research suggests that women describe or present themselves as more masculine in an attempt to be perceived as qualified amongst their male colleagues (Ellemers, Van den Heuvel, de Gilder, Maass, & Bonvini, 2004), which is related to the incongruity between the perception of stereotypes about women and leaders (Heilman, 2001; Schein, 2001). For example, women have been observed to engage in more masculine communication styles in the face of gender stereotyping or discrimination (von Hippel, Wiryakusuma, Bowden, & Shochet, 2011b). Specifically, women were found to use fewer linguistic features typically associated with and used by women, such as hedges (phrases that work reduce assertiveness, e.g. ‘I was wondering if...’), hesitations, and tag questions (used to soften statements and invite agreement from the listener, e.g. ‘it’s a nice day, isn’t it?’) (von Hippel et al., 2011b). Furthermore, women have also been observed endorsing masculine traits as more characteristic of themselves (Von Hippel, Walsh, & Zouroudis, 2011a), and rating their own masculinity as higher than that of their female subordinates (Faniko, Ellemers, & Derks, 2016). Secondly, women tend to emphasise their difference from female subordinates in order to create and draw attention to the distance between themselves and junior women, particularly in terms of career commitment or ambition (Derks et al., 2011a). Lastly, findings suggest that Queen Bee women may work to protect the status quo or legitimise gender hierarchy in organisations, through opposing collective action that attempt

to serve junior women or denying the existence of gender discrimination and female disadvantage in their work setting (Derks, Van Laar, Ellemers, & de Groot, 2011b; Ng & Chiu, 2001; Rindfleish & Sheridan, 2003; Stroebe, Ellemers, Barreto, & Mummendey, 2009). For example, senior policewomen self-described as more masculine than their peers, reported that they were different from junior policewomen, and denied the existence of gender discrimination within their police force (Derks et al., 2011b).

Despite the discriminatory and misogynistic nature of the ‘Queen Bee’ label, the incidence of senior women engaging in these behaviours is detrimental to women’s career experiences in several ways. While these behaviours may aid senior women in the short term, they are likely to cause women psychological distress in the long term, as the rejection of an individual’s identity by their peers is psychologically taxing, especially as these women will likely not receive the support from their gender group that tends to ameliorate this distress (Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005; Schmitt, Branscombe, Kobrynowicz, & Owen, 2002). Similarly, junior women’s career experience suffers when they perceive distance between herself and her female senior, as they are not afforded the positive influence of same-gender role models that has been identified as beneficial to navigating negative stereotypes (Lockwood, 2006). Furthermore, senior women’s endorsement of negative stereotypes and their denial of gender hierarchy within their organisations are perhaps more damaging than men’s, as women’s attitudes may be taken as more credible by junior women as well as society (Baron, Burgess, & Kao, 1991; Derks et al., 2016). At the societal level, as addressed earlier, the entire phenomenon of ‘Queen Bees’ in and of itself and the way it constructs driven senior women legitimises gender inequality in the workplace. This is because it moves the blame for women’s underrepresentation

in leadership away from the unjust and discriminatory system and onto women (Mavin, 2008), painting women as their ‘own worst enemies’ (Fisher, 2015).

While the ‘Queen Bee’ phenomenon is assumed to be attributed to an inherent competitiveness among women, as reinforced by popular media, research has demonstrated that this is simply not the case. In fact, Derks et al. (2016) review of the ‘Queen Bee’ literature revealed that women only engage in these behaviours in order to be accepted into the male-dominated context of leadership wherein males are valued over women. The authors assert that while the ‘Queen Bee’ phenomenon is clearly a source of discrimination for women, it is better understood as a consequence of workplace gender discrimination, as women are forced to undertake assimilation strategies in order to achieve success within the gender hierarchy of leadership. In support of this, Queen Bee behaviours have been observed among women who report experiencing higher levels of gender discrimination throughout their career (Derks et al., 2011a), and women have been found to be more likely to engage in these behaviours when they are reminded of the gender bias within leadership (Derks et al., 2011b). This strategy can be understood through social identity theory, which asserts that the members of a minority group in a disadvantaged position will likely feel as though their identity is threatened due to the low value placed on the group’s characteristics (Derks, van Laar, & Ellemers, 2006). In managing social identity threat, individuals typically engage in collective action (benefiting the group with possible negative individual outcomes) or individual action (benefiting the individual with possible negative group outcomes) (Ellemers, Spears, & Doosje, 2002), and therefore Queen Bee behaviours can be understood as individual-level coping actions as a response to identity threat.

To further support this, research has found that these behaviours aren't specific to women, and occur in members of other negatively-stereotyped and low-status groups when pursuing individual mobility (Van Laar, Bleeker, Ellemers, & Meijer, 2014). For example, gay men have been found to emphasise their masculinity and distance themselves from the perception of gay men being effeminate (Clarkson, 2006; Eguchi, 2009; Han, 2009; Hunt, Fasoli, Carnaghi, & Cadinu, 2016), older adults who feel threatened by negative stereotypes about their age have been found to distance themselves from their age group by diverting their gaze away from images of old people (Weiss & Freund, 2012; Weiss & Lang, 2012), and research has shown distancing behaviours in African American individuals, such as sitting further away from a negatively viewed peer in order to create physical distance, when under threat of negative stereotyping (Cohen & Garcia, 2005; Fordham, 2008). These behaviours are referred to as self-group distancing (Derks, van Laar, Ellemers, & Raghoe, 2015), and give evidence to the argument that 'Queen Bee' behaviours are not inherent to women. Additionally, these individual-level coping mechanisms are related to the level of identification the individual feels towards their group (Derks et al., 2015), and this aspect plays a vital role in determining whether senior women will engage in collective (e.g., campaigning for more training opportunities for women, affirmative action initiatives) versus individual action (e.g., individual mobility) in the face of gender discrimination.

The Role of Gender Identification in Senior Women's Distancing Behaviours

As discussed, social identity theory provides a framework for understanding why senior women engage in 'Queen Bee' behaviours. Considering that women are disadvantaged at work specifically due to their gender, it is the strength of their gender identification (GID) that appears to dictate their tendency

towards either collective or individual strategies. Gender identification is related to social identity theory, which asserts that individuals define themselves through the categories that are shared with other people (Deaux, 2001). While gender identity refers to an individual's awareness and categorisation of themselves as either male or female, gender identification refers more to an individual's social or collective identity (Cameron & Lalonde, 2001; Schmader & Block, 2015). It can be understood as "the extent to which individuals acknowledge that they identify with other members of their gender group and that their gender is an important reflection of who they are" (Foley, Ngo, Loi, & Zheng, 2015, p. 653), and the strength of this varies across individuals within the group.

Exploring the relationship between discrimination and an individual's commitment to their social group bears pertinent revelations. Namely, in the face of discrimination, highly committed individuals are likely to express loyalty and increased affiliation with the group as well as engaging in collective action, in an attempt to improve the group's situation. Conversely, individuals with weak commitment are likely to pursue individual mobility and distance the self from the group in order to avoid the negative identity attached to the group and gain access to the more favourably viewed group (Ellemers et al., 2002). This relationship between group commitment and individual versus collective action has been observed across a variety of low status groups. For example, high group identification among gay individuals was found to predict willingness to participate in activism activities (Simon et al., 1998; Simon, Stürmer, & Steffens, 2000), and similarly high levels of group identification predicted union members' willingness to engage in collective action in response to conflict (Veenstra & Haslam, 2000). Furthermore, in experimental conditions with manipulated groups and status, both male and female participants displaying low identification

displayed more desire for individual mobility, which persisted even in the absence of identity threat (Ellemers, Spears, & Doosje, 1997). Considering gender identification specifically, women with high gender identification have been found to reject benevolent, hostile, and modern forms of sexism (Becker & Wagner, 2009), display more support for feminism (Burn, Aboud, & Moyles, 2000), and be more supportive of aggressive confrontations of sexism (Becker & Barreto, 2014) in comparison to weakly identified women.

The relationship between gender identification and individual mobility has also been demonstrated specifically amongst women in male-dominated workplace contexts. For example, Vial and Napier (2017) observed a relationship between positions of power or leadership, low gender identification, and the endorsement of benevolent sexism—characterising women as innocent, pure, weak, and in need of male protection— among female participants, and senior women were found to engage in distancing behaviours such as masculine self-descriptions in the face of gender discrimination, however this effect was mostly observed among women with low gender identification (Derks et al., 2011a). Additionally, senior policewomen engaged in Queen Bee responses when they were reminded of the gender discrimination in their workplace, but only among those who identified weakly with other women at work, while policewomen with strong gender identification displayed increases in their motivation to improve opportunities for all women (Derks et al., 2011b). However, most research examining this relationship has employed self-report questionnaires and relies on individuals' awareness and honest recall of their engagement in these distancing behaviours. There is a lack of research in this vein that directly observes participants' engagement with self-group distancing in an experimental setting. One such study utilising a behavioural measure within an experimental

methodology of participants' use of group distancing behaviours found that senior women in a simulated business scenario favoured male subordinates above female subordinates, especially when their gender identification was weak (Kaiser & Spalding, 2015). This research indicates that the weaker a woman's gender identification, the more pronounced her favouritism for male subordinates was. By manipulating the conditions within the study and examining the participants' behaviour directly, the authors were able to more confidently draw conclusions about the interrelationship between 'Queen Bee' behaviours and gender identification, and further research in this vein will help provide an even clearer understanding of this link through the replication of an uncommon methodology within a different cultural context.

Subsequently, the current research is designed to address two central aims. The first aim is to investigate the relationship between gender identification and QB-related distancing behaviours through a replication of Kaiser and Spalding's (2015) investigation. The second aim is to provide additional insight into the measurement and assessment of the QB phenomenon by exploring the relationships between the behavioural QB measure and several self-report QB measures.

Purpose of Research

The purpose of this research was to explore the Queen Bee phenomenon and group distancing behaviours. In particular, the aim was to add to the current literature by replicating the design of Kaiser and Spalding's (2015) study within the context of New Zealand. The large majority of research in this topic has been conducted overseas, and therefore gaining an understanding of this phenomenon within the New Zealand context is useful, particularly as gender equality attitudes and positions vary across different countries and cultural contexts. The specific

aim of this research is concerned with the ultimate goal of aiding women in obtaining leadership and executive positions within the workplace more, as well as having better experiences and more success in these roles. While the need to change the masculine culture and male-dominance within organisations is blatantly obvious, this is a long-term solution and still requires immense time and effort in order to achieve this goal. However, helping to equip women with individual-level strategies which they can employ in their own work environment to better respond to the gender hierarchy and discrimination has the potential to provide benefits in the interim, as well as working in parallel towards the end goal of culture shift.

Furthermore, this study sought to examine the role that women's gender identification plays in their engagement with group-distancing behaviours. Social identity research asserts that members of disadvantaged groups employ various strategies to cope with the negative attitudes directed at their group and the identity threat that accompanies, and that these strategies are related to the strength of an individual's commitment to their group. By exploring the role that gender identification plays specifically in the emergence of Queen Bee responses in women we may be better able to design and implement interventions that help women navigate the social identity threat they experience in their careers. For example, Kinias and Sim (2016) found that a self-affirmation intervention helped women's performance in the presence of stereotype threat. Similarly, implementing an intervention of this nature may help women who identify weakly with their gender group to form a more emotional attachment to women in general, and therefore avoid engaging in distancing behaviours.

It is important to note that this research was not based in the sexist belief that women should inherently help their fellow women at work as opposed to

displaying competitiveness or striving for personal success. Rather, this research arose from the notion that women may be largely unaware of the antecedents of these distancing behaviours and deserve the ability to navigate the gendered leadership sphere better informed of their own actions. Moreover, this research does not support the expectation that women need to be warm or accommodating towards other women throughout their careers simply as a result of their gender. Instead, the central intention is to provide further evidence that women are not responsible for these ‘Queen Bee’ behaviours and inform the development of individual coping mechanisms that still allow female leaders the mitigating effects of group support at these top levels. Presently, the incidence of a woman facing gender discrimination and social identity threat within her career is essentially unavoidable, and therefore providing women with strategies to respond more effectively (both individually and collectively) could be enormously beneficial.

This study strives to add to the current body of research by examining the relationship between women’s distancing responses and their gender identification through both self-report indicators (indexing explicit attitudes) as well as a behavioural measure (indexing implicit attitudes). The majority of studies examining the relationship examine ‘Queen Bee’ behaviours via self-report questionnaires (Derks et al., 2011a; Derks et al., 2011b), and incorporating behavioural indicators may provide a better understanding of the link. The first part of the present research was based on Kaiser and Spalding’s (2015) study, however it adds to this by also examining the distancing behaviours of men in a context where their gender is underrepresented. Similar to this previous research, this study explores this relationship within university students. The ‘Queen Bee’ literature has focused on examining Queen Bee behaviour in working women who are in the midst of their careers, however there is value in exploring the

phenomenon in those who are at the beginning of their careers. Evidence of the responses in young women with weak gender identification could reveal the potential worth of providing individual-level interventions to these young women to address the behaviours before even entering the workplace, and better equip them with strategies for navigating the identity threat they will undoubtedly face.

The second part of the present research is concerned with exploring the relationship between self-report and behavioural measures of the QB phenomenon. Previous research investigating the Queen Bee phenomenon and its relationship with gender identification have typically employed self-report questionnaires (Derks et al., 2011b; Derks et al., 2015; Faniko et al., 2016). These tools assess individuals' explicit engagement in or endorsement of QB indicators, such as masculine leadership style or elevated ratings of personal career commitment compared to ratings of other women and rely on an individual's awareness and acknowledgement of their own behaviour, and their honest responses. As a result, these tools may be susceptible to dishonesty, or a lack of self-awareness, and therefore the results may not always accurately represent the QB phenomenon. On the other hand, behavioural (implicit) measures may be more difficult for individuals to outwit, and may potentially provide a more accurate assessment of how participants realistically engage in QB behaviours in a real-life context. This, coupled with the fact that there is often discrepancies and inconsistencies between an individual's explicit and implicit attitudes towards the same issue (Malinen & Johnston, 2013; Nosek et al., 2002), means it is important to gain an understanding of how these different types of measures relate to each other in the assessment of the QB phenomenon.

Lastly, this research endeavours to supplement the current body of literature regarding the Queen Bee phenomenon by replicating Kaiser and

Spalding's (2015) previous study. Given the lack of replicative research within the field of psychology—and more specifically, the field of organisational/industrial psychology (Makel, Plucker, & Hegarty, 2012)—it is important to conduct research of a replicative nature in order to explore reproducibility, establish accuracy of findings (Schmidt & Landers, 2013), and ensure trustworthiness is maintained within the field (Kepes & McDaniel, 2013).

Gender Identification and Group Distancing in Women

Past research conducted by Kaiser and Spalding (2015) employed a behavioural measure, which involved setting up a simulated business situation and examining whether women provided more help to a female subordinate or male subordinate who were ostensibly striving for promotion. This research also examined participants' gender identification and found that women's gender identification predicted whether they would favour the male or female candidate. Specifically, when these participants were advanced to a leadership role in which their gender was underrepresented, women who reported weak gender identification were more likely to help their male subordinate gain promotion over their female subordinate, in comparison to strongly identified participants. Based on this past research, it was hypothesised that:

Hypothesis 1. Gender identification will be related to behavioural group-distancing in women.

Hypothesis 1a. Women with low gender identification will favour the male candidate more.

Research on social identity and identity threat asserts that individuals with higher levels of group identification and commitment are more likely to respond to group-based threat with collective action, attempting to redress the situation of low group status (Breinlinger & Kelly, 1994; Ellemers et al., 2002; Simon et al.,

1998; Veenstra & Haslam, 2000). One possible form of collective action may be to increase the representation of their group in high-ranking positions in order to advance the status of their group, for example by ensuring more members of their group are promoted. Based on these assumptions, it was hypothesised that:

Hypothesis 1b. Women with high gender identification will favour the female candidate more.

Gender Identification and Group Distancing in Men

According to social identity theory, individuals of low status groups will attempt to distance themselves from the negative perception attached to their group, and this response holds true across a variety of low status groups, such as racial minorities (Cohen & Garcia, 2005; Fordham, 2008), older age individuals (Weiss & Freund, 2012; Weiss & Lang, 2012), gay men (Clarkson, 2006; Eguchi, 2009; Han, 2009), and even American students in relation to their American identity in the Trump era (Goldstein, 2017). Furthermore, the strength of an individual's commitment to their group's identity predicting their engagement in distancing behaviour is an effect that also holds true across various groups. For example, the idea that weaker identification with the group results in distancing has been demonstrated amongst gay individuals (Simon et al., 1998; Simon et al., 2000) and union employees (Veenstra & Haslam, 2000). Considering this research, it is not unreasonable to assume that when men are in a setting in which their gender group is of low status, they will distance themselves from this identity, and more so when their gender identification is weaker. Therefore, based on this previous research, it was hypothesised that:

Hypothesis 2. Gender identification will be related to group-distancing in men

Hypothesis 2a. Men with low gender identification will favour the female candidate more.

Hypothesis 2b. Men with high gender identification will favour the male candidate more

Explicit and Implicit Assessment of Queen Bee

Research has demonstrated incongruence between implicitly-held beliefs and explicit attitudes towards women in leadership. For example, studies assessing explicit attitudes suggest that women are perceived as confident, assertive, (Duehr & Bono, 2006) and competent (Abramson, Goldberg, Greenberg, & Abramson, 1977) in the workplace, and successful in leadership roles (Eagly, Mladinic, & Otto, 1991). Conversely, when implicit beliefs are examined, women are associated with managerial success less than men (Latu et al., 2011). Considering this, individuals may be given different results on measures assessing QB attitudes or responses explicitly versus measures assessing implicit QB behaviours. Therefore, based on past research we hypothesised that:

Hypothesis 3. There will be a weak, or no correlation between participants' responses on explicit Queen Bee indicators and the implicit measure assessing Queen Bee behaviour

Hypothesis 3a. There will be a weak, or no correlation between participants' responses on the leadership style explicit measure and the implicit measure assessing Queen Bee behaviour.

Hypothesis 3b. There will be a weak, or no correlation between participants' responses on the personal career commitment explicit measure and the implicit measure assessing Queen Bee behaviour.

Furthermore, given that explicit QB indicators are often employed in tandem in previous research, and represent the connected facets that contribute to the Queen Bee phenomenon, it is reasonable to assume they will be related to each other in terms of participants' responses. Therefore, it was hypothesised that:

Hypothesis 4. There will be moderate positive correlation between the ‘leadership style’ explicit QB indicator and the ‘personal career commitment’ explicit QB indicator

In summary, the primary aim of the present research was to examine the relationship between gender identification and ‘Queen Bee’ distancing behaviours in women, and whether weaker identification predicted more engagement with distancing behaviours both explicitly and implicitly. The second part of this aim was to explore whether men would also engage in distancing from their gender group when their gender was underrepresented, and if the relationship with gender identification was also present in male participants. Finally, as a supplementary and additional investigation, this research aimed to explore incongruity between participants’ favouring or hindering of female candidates and their explicitly expressed QB attitudes.

Summary of Hypotheses

Gender identification and group distancing in women.

Hypothesis 1. Gender identification will be related to behavioural group distancing in women.

Hypothesis 1a. Women with low gender identification will favour the male candidate.

Hypothesis 1b. Women with high gender identification will favour the female candidate.

Gender identification and group distancing in men.

Hypothesis 2. Gender identification will be related to group-distancing in men.

Hypothesis 2a. Men with low gender identification will favour the female candidate.

Hypothesis 2b. Men with high gender identification will favour the male candidate more.

Explicit and Implicit Assessment of Queen Bee

Hypothesis 3. There will be a weak, or no correlation between participants' responses on explicit Queen Bee indicators and the implicit measure assessing Queen Bee behaviour

Hypothesis 3a. There will be a weak, or no correlation between participants' responses on the leadership style explicit measure and the implicit measure assessing Queen Bee behaviour.

Hypothesis 3b. There will be a weak, or no correlation between participants' responses on the personal career commitment explicit measure and the implicit measure assessing Queen Bee behaviour.

Hypothesis 4. There will be moderate positive correlation between the leadership style explicit QB indicator and the personal career commitment explicit QB indicator

Chapter Two: Method

The present study received ethical approval from the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences at the University of Waikato. The research consisted of a primary investigation in which the relationship between gender identification and behavioural distancing from the gender group was explored via a replication of the management simulation task implemented in the study conducted by Kaiser and Spalding (2015). The research also contained a supplementary investigation of the relationship between the behavioural (implicit) measure of distancing and two explicit indicators of Queen Bee behaviour and attitudes. The nature of this research was cross-sectional and employed the use of a self-report questionnaire (Appendix C) and a behavioural measure (Appendix G). Participation was voluntary, and all participants gave signed informed consent. Responses were coded, codes were not linked to names in any way, and participants were assured of their anonymity.

Participants

Thirty-nine individuals participated in this study, however one participant indicated their gender to be non-binary and therefore their data was removed from any further analysis, leaving thirty-eight participants in total. Participants were recruited through the University of Waikato's Practical Research Experience in Psychology (PREP) program and were all enrolled in a first-year psychology course at the University of Waikato. The study was advertised via the PREP website and appeared in a list alongside other studies from which students were able to participate in. Participants signed up for this study by selecting the date and time of the session they wished to attend. Initially, participants were not informed of any details pertaining to the study with the exception of the

researcher's name, the duration of the session, and whether it required online or in-person participation. Participants received 1 credit towards their 3 required PREP credits for participating in this study.

It is also important to note that the PREP program was nearing the closing date when the present study was advertised for participants, and this limited recruitment timeframe meant the sample size was very small. Furthermore, the PREP requirements regarding students made it more difficult to recruit a large-sized sample—students were not required to participate in in-person studies and were able to fulfil their participatory solely from online surveys, and therefore recruiting participants for an in-person, on-campus, one-hour-long experiment was difficult. These aspects of recruitment both contributed to the small sample size, the effect is discussed further in Chapter Four.

Demographic information of the sample is detailed in Table 1. The large majority of the sample was comprised of females (76.3%). Most participants indicated their ethnicity to be New Zealand European (55.3%), followed by Maori (21.1%), with other ethnicities including Indian (5.2%) and Pacifica (2.6%). The age range of the sample was 18-47, and a large majority of the sample were in the under 20 years age bracket (71.1%), with the rest of the sample falling in the 20-29 and 40-49 age brackets. Regarding employment status, approximately half of the participants were employed part-time while the other half were unemployed. All of the participants were enrolled in a first-year psychology course, and just over half of the sample indicated their major to be psychology (58%). Other majors included management, sociology, biology, and sport science.

Procedure

Participants attended their elected lab session slot individually and the experiment took place with only the researcher and the single participant in the

room, lasting approximately one hour. On arrival at the session, the participant received an information sheet (Appendix A) briefly describing the aim of the research and the schedule for the session, and completed the consent form (Appendix B). Via the information sheet, the participant was informed that the present study was assessing their general attitude towards leadership and their behaviour in a workgroup setting with their peers. The participant was not informed about the gender-focused nature of the study and received no information pertaining to the 'Queen Bee syndrome' in order to ensure their responses and behaviour in the session were natural and not driven or coloured by social desirability. They were also informed that the session contained minor concealment prior to their completion of the consent form, and that they would be debriefed of the research in full at the end of the session.

Participants completed a set of questions collecting demographic information and proceeded to complete a self-report questionnaire. The questionnaire was designed to assess the strength of their gender identification, and their engagement with several indicators of 'Queen Bee' behaviour and attitudes. The measure also contained several distractor items related to their attitudes about the age, gender, and ethnicity of leaders and workgroup peers, in order to conceal the gender focus. Following the completion of the measure, the participant was informed that the remainder of the session would function as a simulated business management activity, in which they would be competing against two other participants to attain the highest position (manager) within the workgroup. The remainder of the procedure is a replication of the methodology implemented in the experiment by Kaiser and Spalding (2015). They were told that their fellow workgroup peers would be undertaking identical tests in separate rooms, and that achieving the highest position would provide the participant with

an advantage later in the session. The participant was provided with profiles representing their competitors, detailing each participants' name, gender, major, and approach to leading a team. They were informed that this information had been drawn from answers in the questionnaire, and that their own information was provided to the other two participants. In actuality, these additional participants did not exist, and the profiles were randomly generated (Appendix D). The profiles described one male and one female, and the demographic information was randomly assigned to either the male or the female profile each session, so as to ensure these factors were not permanently assigned to either gender.

The participant was given two written tests to complete and was told these would assess their management aptitude (Appendices E and F). They were also informed that the participant who achieved the highest score would serve as manager for the rest of the session, resulting in certain benefits compared with their workgroup. These tests were basic creative thinking exercises, one asking the participant to imagine being trapped in the wilderness and choose the most valuable items from a list, and the other comprised of several basic brainteaser riddles. In order to emphasise the underrepresentation of the participant's gender in management or leadership positions in this situation, the wording of certain parts of the test was deliberately geared toward the opposite gender (see Appendices E and F; bold sections indicate gender-specific wording), so as to make the participant feel as though the management position was not suitable for their gender or that members of their gender group seldom reached the position.

Following completion of the test, the researcher took back the test and marked the answers, ostensibly receiving communication from the other rooms about the other two participants' marks before telling the participant that they had gained the highest score and would thus function as manager for the remainder of

the session. The participant was then asked to sign the Manager Roster. To further emphasise the underrepresentation of the participant's gender at this level of leadership, the roster contained ten names of alleged previous managers. Of these, eight were of the opposite gender to the participant, signalling that individuals of their gender group had typically not performed well during testing. After being assigned to the manager position, the participant was informed that their first task as manager was to aid in the design of the test which would select which of their two peers (now their subordinates) would be assigned to the assistant manager role. It was explained that this position was desirable to their peers, as it would provide an advantage over the third participant.

The task the participant undertook was adapted from Kaiser and Spalding's (2015) study, with the primary measure in the task consisting of several questions designed to produce a 'helpfulness score' in relation to each candidate (Appendix G). The participant was told that their subordinates would be completing a test that required them to translate a gibberish phrase (e.g. 'Dinkle wrinkled in a car') and decipher the well-known phrase it rhymed with and represented (e.g. 'twinkle twinkle, little star'). The role of the manager in the design of the test was to allocate clues to their subordinates that they would rely on to aid in their task. Therefore, the participant's task as manager was to select one clue per phrase to allocate to the subordinate, and they were given a choice of three clues ranging in helpfulness. Specifically, the participant needed to choose between an extremely helpful clue (e.g. 'get your telescope out for this childhood song'), a somewhat helpful clue (e.g. 'They're like diamonds in the sky'), and a less helpful clue (e.g. 'but they aren't Lucy'). The participant was informed they would be selecting clues to help each candidate in their assessment, and that as in reality, as manager they possessed some power over the selection of their assistant

manager. The participant selected clues for six gibberish phrases for candidate one, followed by six question and clue sets for candidate two. The question and clue sets were different for each of the candidates to make it more difficult for the participant to select equally helpful clues for both candidates. Further, the two different sets of questions and clues were counterbalanced so that half of the participants assigned clue set one to the male candidate and clue set two to the female candidate, and half of the participants assigned the clue sets to the opposite gender.

The participant was then told the session had been completed, and was verbally debriefed in full, and received a written debrief (Appendix H).

Measures

The data for the present research was collected via a self-report questionnaire and a behavioural measure of participants' gendered favouritism. The questionnaire was developed using measures from previous research and consisted of 74 items in total, with items measuring the strength of gender identification, self-perception of being a leader concerning masculinity and femininity, and perceptions of personal career commitment compared to others. Several items pertaining to attitudes about the ethnicity and age of leaders, and of one's own leadership qualities were included and functioned as distractors. Participants were required to indicate the extent to which they agreed with each statement, on a 7-point Likert scale ranging from strongly disagree to strongly agree. Questions gathering demographic information preceded the self-report questionnaire. Items marked with an asterisk were reverse coded. The behavioural measure of favouritism was replicated from previous research conducted by Kaiser and Spalding (2015).

Gender Identification

The strength of participants' gender identification was assessed using a measure comprised of seven items drawn from previous research (Foley, Ngo, & Loi, 2006; Derks et al., 2011b; Becker & Wagner, 2008). The measure assessed the importance of the participants' gender to their self-identity, and the importance specifically in the workplace. Three items drawn from Foley, Hangyue, and Loi (2006) measured identification ("I identify with other members of my gender group", "I am like other members of my gender group", and "My gender group is an important reflection of who I am"). Two items from Derks et al. (2011b) were used ("I feel connected to other members of my gender group at work" and "At work, being a woman/man is important to me"). Lastly, two items from Becker and Wagner (2009) were used ("I feel strong ties to other members of my gender group" and "Overall, my gender is an important part of my self-image"). Minor modifications were made to several statements to ensure the items were applicable to both male and female participants in the present study. A final gender identification score reflecting the importance of the participant's gender to their identity was calculated by summing the seven items, following the procedure of the research cited above. Possible scores ranged from 7 to 49, with higher scores indicating more importance placed on gender and lower scores indicating less importance placed on gender. Internal consistency of the seven-item gender identification measure was satisfactory with a Cronbach's alpha of .77.

Behavioural Measure of Gender-Group Distancing

Participants' favouritism of one candidate over the other was measured using the gibberish phrase and clue task developed from Kaiser and Spalding's (2015) study. A set of 24 phrase and clue sets were developed, and seven independent coders rated each clue on their degree of helpfulness in solving the

relevant phrase on a scale from 1 (not helpful at all) to 7 (extremely helpful). The average helpfulness score for each clue across the seven raters was calculated, and the 12 phrase and clue sets which had the largest difference in helpfulness score between the least and most helpful clues were retained for use in the study. The helpfulness of these clues ranged from 1.33 to 6.67 ($M = 4.01$, $SD = 1.7$). These 12 sets were divided into two sets of six phrase and clue sets, and participants selected one clue for each of the six phrases for the female candidate, and one clue for each phrase from second set for the male candidate. In order to assess whether the participant favoured one candidate over the other by assigning more helpful clues, a final score of favouritism toward the female candidate was calculated by subtracting the average helpfulness of the clues given to the male candidate from the average helpfulness of the clues given to the female candidate. This final score functioned as a measure of favouritism shown to the female candidate, with negative scores indicating the participant favoured the male candidate, and positive scores indicating the participant favoured the female candidate. The terms ‘favouritism’, ‘distancing’, and ‘lifting and kicking’ will be used interchangeably within this report, and all refer to the QB-related behaviour of distancing from the gender group.

Supplementary Measures: Explicit Queen Bee Indicators

Self-perception of Leadership Masculinity/Femininity

The first indicator of explicit Queen Bee attitudes was developed from previous research conducted by Derks et al. (2011b) and was concerned with the idea of Queen Bees characterising themselves as more masculine than feminine. This measure assessed participants’ self-descriptions as leaders in terms of masculinity versus femininity. The measure was comprised of two separate four-item scales, designed to assess the extent to which participants characterised

themselves as masculine leaders or feminine leaders according to stereotypically gendered leader qualities. Internal consistency of the four-item masculine scale (“I am a charismatic/dedicated/determined/intelligent leader”) was satisfactory with a Cronbach’s alpha of .72, as was the four-item feminine scale (“I am a caring/compassionate/sensitive/understanding leader”) which had a Cronbach’s alpha of .78. A final score functioning as an indicator of a Queen Bee attitude reflecting participants’ more masculine self-description was calculated by summing the scores of the two separate scales (ranging from 4 to 28) and subtracting the feminine score from the masculine score. Possible scores ranged from -24 to 24, with negative scores reflecting a more feminine self-description as a leader and positive scores reflecting a more masculine self-description as a leader.

Personal Career Commitment

The second indicator of explicit Queen Bee attitudes was taken from Derks et al. (2011a) previous study, and was concerned with the idea that Queen Bees rate their personal career commitment as higher than that of their gender group. This measure assessed the participants’ attitude about their own career commitment, and was comprised of two items (“It is important to me to be successful in my job and career” and “I often consider what I can do to advance in my field”). A separate subscale of this measure was comprised of four items assessing participant’s attitudes towards the career commitment of others in terms of gender (‘The average male employee finds it important to be successful at work’, ‘The average man often considers what he can do to advance in their job’, ‘The average female employee finds it important to be successful at work’, and ‘The average woman often considers what she can do to advance in their job’). In order to analyse whether participants rated their personal career commitment as

higher than that of their gender group, a difference score was calculated by summing the scores from the personal career commitment items and subtracting the gender stereotyped score of the participant's gender group. Possible scores ranged from -12 to 12, with positive scores indicating a higher rating of personal career commitment compared with the career commitment of the gender group. Cronbach's alpha for this scale was .82.

Data Analysis

Factor Analysis

An exploratory factor analysis (EFA) using Principal Axis Factoring (PAF) was conducted in order to identify and understand the underlying factor structure of the relevant measures (Field, 2009). Oblique rotation (direct oblimin) was employed on the recommendation of Field (2009) as the factors were expected to be related. In order to determine whether the sample size adequate to conduct the EFA, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were run. According to Field (2009), the KMO statistic needs to be above the value of .5 and Bartlett's test needs to be significant (less than .05) in order to signal that the sample size is appropriate for exploratory factor analysis. Factors with an eigenvalue greater than 1 were retained, as recommended by Kaiser (Field, 2009). Furthermore, in examining factor loadings, Yong and Pearce (2013) recommend rotated factor loading values of .32 or greater can be considered to significantly load on the relevant factor. EFA was run for both the gender identification and self-perceived leadership style measures, and the pattern matrices were examined for both in order to determine the structure of each.

Descriptive Statistics

In order to explore and provide information on the means, standard deviations, skew, and kurtosis, descriptive statistical analyses were run for each variable. In order to establish normal distribution of the sample, skew and kurtosis were examined. Given the small sample size, z-scores for skew and kurtosis of each variable were also calculate in order to determine whether values were significantly different from a normal distribution, with values greater than 1.96 indicating a distribution significantly different from normal (Kim, 2013).

Reliability Analysis

In order to determine the internal reliability of each scale, Cronbach's alpha (α) was calculated. Scales with a Cronbach's alpha value greater than .7 were considered to have acceptable internal reliability. The exact values of each scale are presented in the next chapter.

Regression Analysis

In order to examine the hypothesis that gender identification would predict behavioural lifting and kicking, a linear regression analysis was conducted. A simple linear regression was calculated to predict female participants' favouritism toward the candidate of the same gender based on their gender identification score, with p values examined in order to determine the significance of the relationship observed (p values less than .05).

Supplementary Correlation Analysis

In order to explore and examine the relationships between the explicit QB indicator scales and the behavioural QB measure, Pearson's product-moment correlations were calculated, and p values were examined to determine the statistical significance of any relationships observed. Tables 5 and 6 in the

following chapter display the exact correlation values, with significant relationships at the .05 level marked with an asterisk.

Chapter Three: Results

This chapter presents the statistical analyses carried out on the data obtained and describes the results. The chapter is organised by hypothesis and describes the results for the female participants and male participants separately for each hypothesis. This section is ordered as follows; factor analysis, reliability analysis, descriptive statistics, regression analysis, correlational analysis, and summary.

Exploratory Factor Analysis

Exploratory factor analysis (EFA) was conducted on the Gender Identification and Self-Perceived Leadership Style. Principal axis factoring was used with oblique rotation method (Direct Oblimin), as factors were expected to be related. Factor loadings greater than .3 were considered significant on the instruction of Field (2009).

Gender Identification

EFA was conducted on the seven items in the gender identification measure with an Oblique (Direct Oblimin) rotation. The Kaiser-Meyer-Olkin measure produced a value of .76, which is above the minimum cut-off value of .5 (Field, 2009) and which Hutcheson and Sofroniou (1999) classifies as ‘good’ in terms of the adequacy of the of sample size for factor analysis. Bartlett’s test of sphericity was significant and verified that patterned relationships between the items existed, and therefore it was appropriate to continue with the factor analysis. Two factors presented with eigenvalues greater than 1 (3.1, and 1.05) and accounted for 59.46% of the total variance. Factor loadings were examined, and one item did not produce any factor loadings above the cut-off of .3. Thus, this item was removed and excluded from all following analyses, and the factor analysis was rerun.

The second iteration of the factor analysis showed all six items loaded significantly across two factors. Factor 1 loaded onto five items and Factor 2 loaded onto two items. The items loading on each factor suggest that Factor 1 represents 'emotional connection to gender and gender group' represents and Factor 2 represents 'similarity to members of gender group'. Table 1 displays the items and factor loadings after rotation.

Self-Perceived Leadership Style

EFA was conducted on the 8-item leadership style measure with an Oblique (Direct Oblimin) rotation. The Kaiser-Meyer-Olkin measure produced a value of .68, which is above the minimum cut-off value of .5 (Field, 2009) and which Hutcheson and Sofroniou (1999) classifies as 'mediocre' in terms of the adequacy of the of sample size for factor analysis. Bartlett's test of sphericity was significant and verified that patterned relationships between the items existed, and therefore it was appropriate to continue with the factor analysis. Two factors presented with eigenvalues greater than 1 (3.47, and 1.58) and accounted for 63.15% of the total variance. Factor loadings were examined and confirmed that all eight items loaded significantly across two factors. The items loading on each factor suggest that Factor 1 represents 'feminine leadership style' and Factor 2 represents 'masculine leadership style'. Table 2 displays the items and factor loadings.

Reliability Analysis

A reliability analysis was conducted on the Gender Identification Scale, the two subscales of the Self-Perception of Leadership Style scale (feminine and masculine), and the Career Commitment Perceptions scale. Each of these scales were analysed for internal reliability using Cronbach's alpha (α), with cutoff levels of internal reliability of .7 as recommended by Field (2009). All of the

scales had acceptable Cronbach's alpha values and met the cutoff for internal reliability. These values can be found in Table 3.

Table 1

Gender Identification Pattern Matrix

Items	Factor 1	Factor 2
I feel strong ties to other members of my gender group	.579	
I feel connected to other members of my gender group	.582	
Overall, my gender is an important part of my self-image	.420	
My gender group is an important reflection of who I am	.793	
I am like other members of my gender group		-.811
I identify with other members of my gender group		-.658
Extraction Method: Principal Axis Factoring		
Rotation Method: Direct Oblimin with Kaiser Normalisation		

Table 2

Self-Perceived Leadership Style Pattern Matrix

Items	Factor 1	Factor 2
I consider myself a caring leader	.743	
I consider myself a compassionate leader	.598	
I consider myself a sensitive leader	.852	
I consider myself an understanding leader	.440	
I consider myself a charismatic leader		.677
I consider myself a dedicated leader		.569
I consider myself a determined leader		.588
I consider myself an intelligent leader		.592
Extraction Method: Principal Axis Factoring		
Rotation Method: Direct Oblimin with Kaiser Normalisation		

Table 3

Internal Reliability Analysis

	Cronbach's Alpha
Gender Identification	.78
Self-perceived Leadership Style – Masculine	.73
Self-perceived Leadership Style – Feminine	.78
Career Commitment Perceptions	.82

Descriptive Statistics

The descriptive statistics, including the mean, standard deviation, skew, kurtosis, and internal reliability for the variables for both males and females are presented in Table 4.

The response scale for the Gender Identification measure ranged from 1 (strongly disagree) to 7 (strongly agree). On average, female participants reported moderate levels of gender identification ($M = 4.98$, $SD = .81$), as did male participants albeit marginally lower ($M = 4.65$, $SD = .87$).

The response scale for Self-Perceptions of Leadership Style ranged from 1 (strongly disagree) to 7 (strongly agree) across the masculine and feminine subscales with final scores ranging from -24 (extremely feminine) to 24 (extremely masculine). On average, female participants characterised themselves as slightly more feminine leaders ($M = -4.21$, $SD = 3.06$), while male participants characterised themselves on average as slightly more feminine leaders albeit more masculine than female participants ($M = -1.67$, $SD = 3.78$).

The response scale for Personal Career Commitment (PCC) ranged from 1 (strongly disagree) to 7 (strongly agree), with final scores ranging from -12 (much lower PCC than same-gender peers) to 12 (much higher PCC than same-gender peers). On average, female participants rated their personal career commitment as slightly higher than that of other females ($M = .59$, $SD = 2.28$), while male participants also rated their personal career commitment as and rated their personal career commitment as slightly higher than that of other males albeit marginally more than did female participants ($M = 1.56$, $SD = 1.13$).

The data was analysed for normality, and Table 4 displays the skew and kurtosis values for each variable across both male and female participants, as well as computed z-scores. According to the instructions of Kim (2013) for small

samples less than $n=50$, z-scores were calculated for skew and kurtosis in order to establish whether these scores were significant at an alpha level of .05 (higher than 1.96). Absolute z-score values for all variables were below 1.96, and therefore assumptions of normal data distribution were met.

Regression Analysis

In order to explore the hypothesis that gender identification would predict Queen Bee distancing behaviour in women and continuing to follow the methodology of Kaiser and Spalding's (2015) study, a regression analysis was conducted. A simple linear regression was calculated to predict female participants' favouritism toward the candidate of the same gender based on their gender identification score. Hypothesis 1 predicted a positive relationship between gender identification and favouritism score. The results indicated a non-significant trend in the opposite direction ($R^2 = .07$, $F(1,27) = 2.16$, $p = .15$), with gender identification explaining 7% of the variance in participants' favouritism. It was found that gender identification did not significantly predict favouritism of one gender ($\beta = -.24$, $t(27) = 1.47$, $p = .15$), however results indicate a negative trend as displayed in Figure 1. Thus, no support was found for hypothesis 1.

In order to explore hypothesis 2, a simple linear regression was calculated to predict male participants' favouritism toward the candidate of the same gender based on their gender identification score. Hypothesis 2 predicted a positive relationship between gender identification and favouritism score. The results indicated that gender identification did not significantly predict male participants' lifting or kicking behaviour ($R^2 = .04$, $F(1,7) = .24$, $p = .64$), however a non-significant negative trend was found, similar to the female participants ($\beta = -.1$, $t(7) = -.49$, $p = .64$), which can be seen in Figure 2. Thus, no support was found for hypothesis 2.

Supplementary Correlational Analysis

In order to explore hypotheses 3 and 4, a correlational analysis was conducted. Pearson's product-moment correlation analysis was calculated to explore the relationships between the variables in this study, and values are presented in Table 5. According to Friedman's (1982) calculations, the sample size of this study ($N = 38$) gives the correlations observed in this study a power of approximately .50 at the .05 level ($r = .25$), which suggests the chances of detecting a true relationship are approximately 50%. The limitations of the current study's sample size will be discussed in the next chapter.

Hypothesis 3a proposed that the explicit QB measure self-perceived masculine leadership style would not correlate with the behavioural measure of lifting. There was a non-significant weak positive correlation observed in women, $r = .08$, $p = .68$, and a non-significant weak positive correlation observed in men, $r = .09$, $p = .82$. This suggests that this explicit QB measure and the behavioural measure of lifting were not related, and thus hypothesis 3a was supported.

Hypothesis 3b proposed that the explicit QB measure personal career commitment ratings would not correlate with the behavioural measure of lifting. There was a non-significant weak positive correlation observed in women, $r = .27$, $p = .16$, and a non-significant weak positive correlation observed in men, $r = .21$, $p = .59$. This suggests that this explicit QB measure and the behavioural measure of lifting were not related, and thus hypothesis 3b was supported.

Hypothesis 4 proposed that the explicit QB measure self-perceived masculine leadership style would correlate positively with the explicit QB measure personal career commitment. There was a non-significant weak positive correlation observed in women, $r = .07$, $p = .7$, and a non-significant moderate negative correlation observed in men $r = -.46$, $p = .21$. This suggests the two

explicit QB measures were not related in women, and suggests a trend of more masculine leadership styles relating to lower personal career commitment ratings relative to gender group in men, and thus hypothesis 4 was not supported.

Table 4

Descriptive Statistics of Variables

					z-score of		z-score of
	N	Mean	SD	Skew	Skew	Kurtosis	Kurtosis
Female							
Gender Identification	29	4.98	0.81	-0.55	-1.26	1.58	1.87
Self-perceived Masculine Leadership							
Style	29	-4.21	3.06	-0.75	-1.73	-0.02	-0.03
Personal Career Commitment	29	0.59	2.28	0.51	1.18	0.13	0.15
Behavioural Lifting of Gender Group	29	0.3	0.7	-.73	-1.68	.573	0.68
Male							
Gender Identification	9	4.65	0.87	-0.72	-1	1.05	0.75
Self-perceived Masculine Leadership							
Style	9	-1.67	3.77	1.1	1.54	0.91	0.65
Personal Career Commitment	9	1.56	1.13	0.49	0.69	-1.39	-0.99
Behavioural Lifting of Gender Group	9	-0.21	0.5	0.96	1.34	-0.09	-0.06

Table 5

Pearson's product moment correlations for predictor and outcome variables in female participants

Variables	Self-Perceived Masculine Leadership Style	Personal Career Commitment	Behavioural Lifting of Gender Group
Self-Perceived Masculine Leadership Style	—		
Personal Career Commitment	.07	—	
Behavioural Lifting of Gender Group	.08	.27	—

Sample size=29. *p<.05.

Table 6

Pearson's product moment correlations for predictor and outcome variables in male participants

Variables	Self-Perceived Masculine Leadership Style	Personal Career Commitment	Behavioural Lifting of Gender Group
Self-Perceived Masculine Leadership Style	—		
Personal Career Commitment	-.46	—	
Behavioural Lifting of Gender Group	.09	.21	—
Sample size=9. *p<.05.			

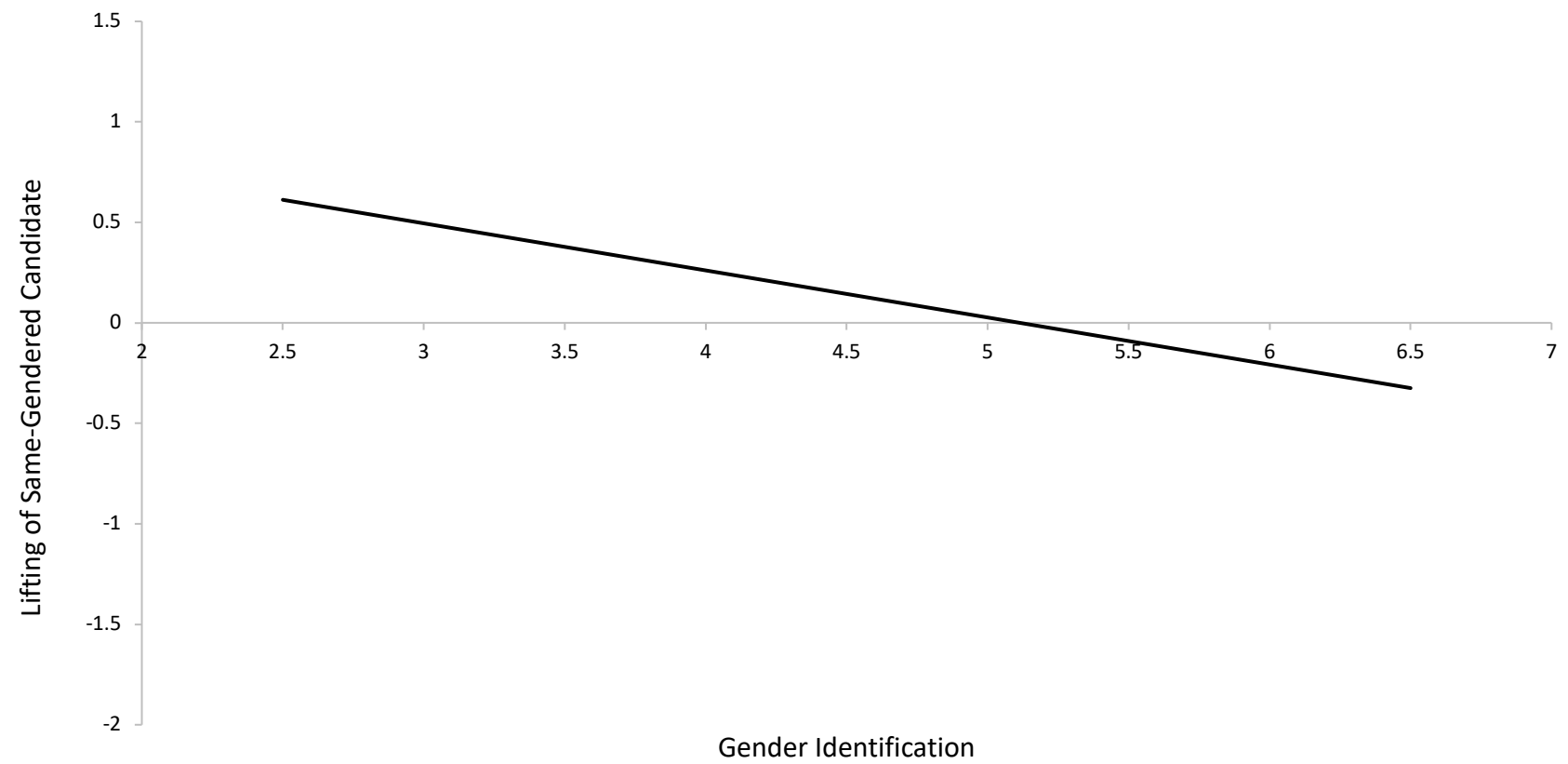


Figure 1. Female participants lifting of female subordinate predicted by the strength of their gender identification

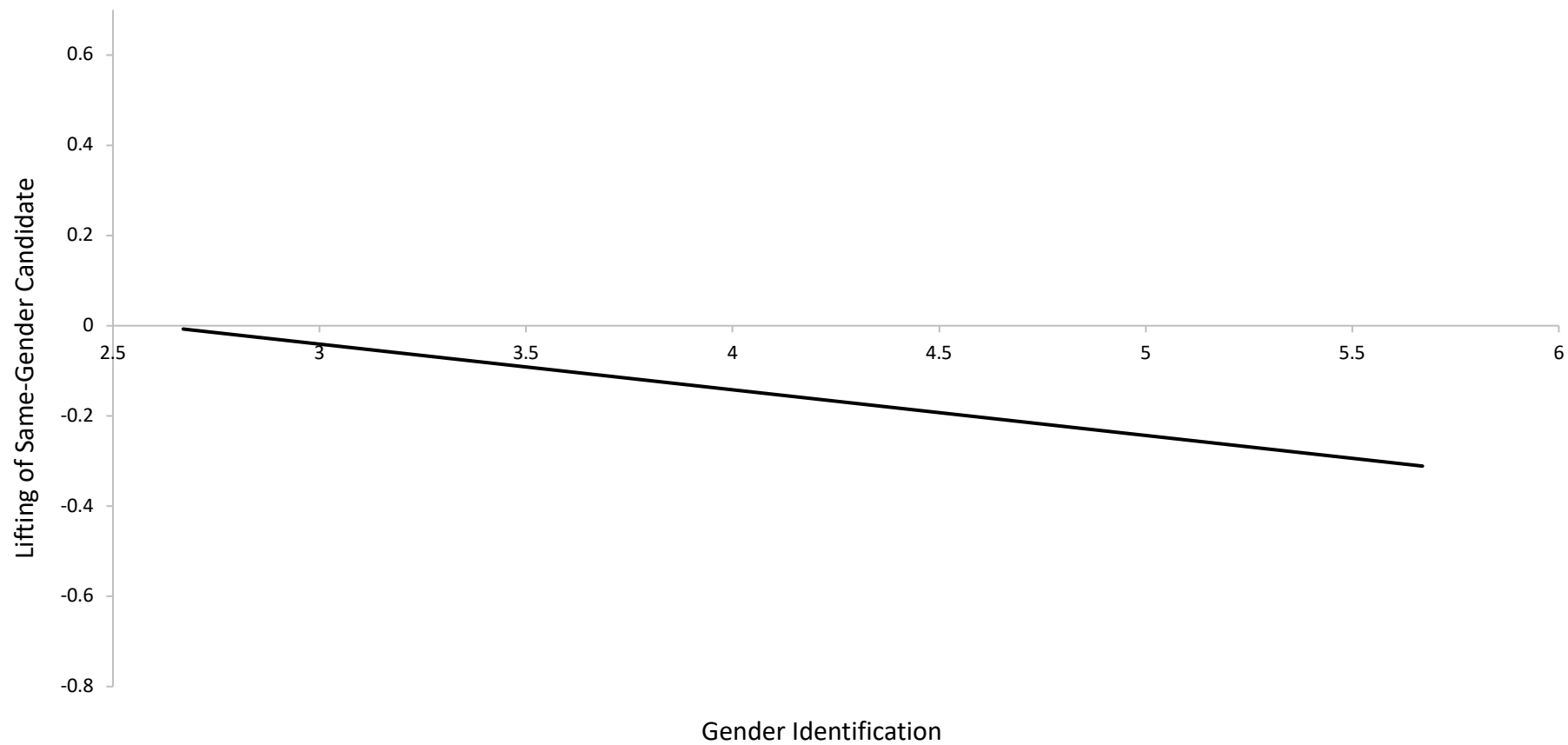


Figure 2. Male participants lifting of male subordinate predicted by the strength of their gender identification.

Chapter Four: Discussion

This research aimed to explore the Queen Bee phenomenon within the New Zealand context. More specifically, the research endeavoured to explore the way in which Queen Bee behaviour functions in university students in New Zealand through a behavioural measure, and investigate the relationship between individuals' performance in this measure and their identification with their gender. Furthermore, the present study sought to explore the relationship between this behavioural measure and explicit, self-report measures of Queen Bee attitudes previously employed in past research concerning the Queen Bee phenomenon.

Past research conducted by Kaiser and Spalding (2015) investigated the relationship between Queen Bee distancing behaviour and gender identification within the context of young women at a North American university and found that lower levels of identification with their gender predicted higher levels of distancing from their female subordinates. The goal of the present research was to add to the current literature by replicating the design of Kaiser and Spalding's study within the context of New Zealand, with the hope of highlighting potential differences in Queen Bee attitudes or behaviours in young women across different countries and cultures. Furthermore, this research aimed to further the current understanding of Queen Bee and distancing behaviours by examining the behaviour of young men when in a similar situation to that facing female leaders in the workplace. Replicating Kaiser and Spalding's (2015) methodology with the additional aspect of including male participants was done in the hope that gaining an understanding of how men behave in an underrepresentation context may shed some more light on the social mechanisms that underlie the Queen Bee phenomenon and self-group distancing behaviours.

The final aim of the present research was to explore the relationship between explicit and implicit measures and methods of assessing Queen Bee attitudes and behaviours. The majority of past research investigating the Queen Bee phenomenon has employed self-report measurement tools in order to assess women's endorsement of Queen Bee attitudes and engagement with Queen Bee behaviours (Derks et al., 2011b; Derks et al., 2015; Faniko et al., 2016), while directly observing women's behaviour in a manipulated underrepresentation context has been less prevalent. Therefore, although studies utilising the explicit tools have found similar results to those utilising behavioural measures, it is essential to explore the relationship between these methods within the same sample in order to gain an understanding of whether they are indeed both measuring Queen Bee attitudes and behaviours in the same fashion.

This chapter is presented in several distinct sections according to the design and central goals of the research, and will follow the subsequent format: examination and discussion of the relationship between gender identification and behavioural distancing from the gender group in women, followed by the same relationship in men; examination and discussion of the relationship between the behavioural distancing measure and the two self-report Queen Bee measures; examination and discussion of the relationship between the leadership style self-report measure and the personal career commitment self-report measure; discussion of the practical implications of the research; discussion of the strengths and limitations of the present study; suggestions for future research in the field of organisational psychology and women in leadership; and concluding remarks.

Gender Identification and Distancing Behaviour

Past research investigating this relationship in women has consistently found that low levels of gender identification have predicted higher levels of

Queen Bee behaviours, such as acceptance or endorsement of sexism (Vial & Napier, 2017), emphasising masculine self-descriptions and higher personal career commitment than other women (Derks et al., 2011a), self-report distancing from other women and denial of discrimination (Derks et al., 2011b), and holding back female subordinates from promotion (Kaiser & Spalding, 2015). Of particular interest are the findings of Kaiser and Spalding's study, in which young women with weak gender identification were more likely to favour a male subordinate and hold back a female subordinate when given the opportunity to select an individual for promotion. Considering that the present research replicated the measure that produced this finding, the results of this study offer some interesting insight.

In exploring hypotheses 1a and 1b, the current research failed to find such a relationship. In fact, in contrast with these previous findings, the current research found an opposite trend in young women. Specifically, while the results were not statistically significant, they displayed a trend in which female participants that scored highly on the gender identification measure held back their female subordinate and helped their male subordinate, relative to female participants with weaker gender identification. The lack of statistical significance in this relationship may be attributable to the small sample size, and it is important to note that this trend suggests that strongly identified members of a disadvantaged group may not always opt to engage in collective action in response to discrimination.

In exploring this result, it is important to highlight the different contexts in which this study and Kaiser and Spalding's study were conducted, particularly concerning the culture surrounding gender inequality and gender discrimination in the United States versus New Zealand. In terms of women holding leadership

positions in the workplace, only 12.2% of board seats are held by women in the United States, compared to the 17.5% of board seats occupied by women in New Zealand, while the proportion of board chair positions held by women are 3.4% and 5.6% respectively (Deloitte, 2015). Furthermore, in the 2016 Global Gender Gap Report published by the World Economic Forum (2016), the U.S. is ranked 45th with a gender parity score of .722 out of 1, compared to New Zealand's ninth place ranking and a gender parity score of .781 out of 1. New Zealand also outranks the U.S. in terms of economic participation and opportunity for women and political empowerment of women.

These statistics shed light on the state of gender inequality and systemic discrimination against in women across the contexts of Kaiser and Spalding's research in the United States, and the present research in New Zealand, which may help to explain the difference in findings across the studies. Specifically, the failure to find the same relationship between weak gender identification and distancing from the gender group may be attributable to the much more positive state of gender parity in New Zealand—young women may interact differently with their gender group peers when they have been exposed to less gender discrimination or inequality. In support of this, stereotype threat has been found to lead to identity separation in women (Von Hippel et al., 2011a) and engagement with Queen Bee indicators have been found more dominantly amongst women who report high levels of gender discrimination (Derks et al., 2011a) or who are asked to recall gender bias they have experienced (Derks et al., 2011b).

A further explanation for the findings of the present study is related to the concept of radical collective action, and the effect that engaging in such strategies has on the individual and the group. For example, a somewhat paradoxical relationship between group identification and collective action has been observed

wherein high identifiers are less likely to engage in radical action compared to low identifiers. Specifically, (Jiménez-Moya, Spears, Rodríguez-Bailón, & de Lemus, 2015) recently found that, across two studies, individuals who displayed low levels of identification with their group were more willing to engage in forms of radical collective action in order to rectify the low status of the group than were their strongly-identified fellow group members. The proposed rationale behind this somewhat unexpected phenomenon is related to preserving the image of the group, of which high identifiers are more concerned about, given their higher commitment to the group. Therefore, as radical action may reflect poorly on the group, high identifiers are likely to refrain from endorsing radical action in order to preserve the image of the group, which is so closely tied to their own self-image. On the other hand, low identifiers are less invested in the group identity or image, and therefore adopt a nothing-to-lose mentality which may drive them to engage in radical collective action in order to escape a disadvantaged position or situation (Jiménez-Moya et al., 2015).

This concept is relevant to the present findings, as it appears to contribute to an understanding of the negative trend observed in female participants. In the current study, the lifting behaviour displayed by certain participants, whereby the female candidate was overtly favoured for a promotion over the male candidate, could be perceived as a form of radical collective action. Considering the current binary narrative surrounding feminism (Calder-Dawe & Gavey, 2016), it is reasonable to believe that favouring a female candidate over a male when qualifications and competence are identical may be considered “unreasonable feminism” and therefore radical action.

Social identity theory may also support the current findings, as group members with high group identification and commitment are driven to protect and

preserve the image of the group, and therefore place higher importance on maintaining a positive group perception compared to low identifiers (Tajfel & Turner, 1979). Therefore, while the paradoxical relationship observed in the present research may be a deviation from previous findings surrounding the relationship between gender identification and QBs, it provides insight into the nuances of the relationship and offers support to the idea that this relationship may not be as predictable and straightforward as previously thought.

A final factor which aids in understanding the findings of the present study is related to the measurement of group identification. A recent study conducted by Kachanoff, Ysseldyk, Taylor, Sablonnière, and Crush (2016) investigated the relationship between the two facets of identification that typically contribute to an individual's overall identification with their group. Both the cognitive and emotional dimensions of an individual's group identity contribute to their behaviour and interactions with their fellow group members, however the relationship between these two dimensions is nuanced and may work to explain the unexpected relationship between gender group identification and QB distancing observed in this study.

Specifically, Kachanoff et al. (2016) examined a quadratic curvilinear relationship between the emotional and cognitive dimensions—which they termed in-group affect and identity centrality, respectively. The authors discovered that high levels of in-group affect at both ends of the spectrum—positive and negative—are related to high levels of identity centrality, and this relationship held true across cultural, ethnic, religious, and racial identities. More specifically, individuals who feel strong emotions, either positive or negative, about their group and their member status also feel that their membership to the group is a central facet of their identity, whereas individuals who are emotionally neutral in

regard to their group feel that their membership is unimportant to their self-identity.

This relationship is relevant to the present research findings, as it poses questions regarding the measurement and conceptualisation of gender identification. For example, high scores on the current gender identification were assumed to represent a strong commitment to the gender group, and high levels of importance placed on gender as a component of self-identity—as was the assumption in the research the measure was drawn from—which is not an entirely incorrect assumption to make. However, it does not allow for the nuances of the relationship between positive and negative affect, and assumes that high scoring in the measure represents positive emotions towards the gender group, which may not necessarily be the case.

According to previous research (Kachanoff et al., 2016), high scores likely represent a high level of identity centrality, however they may reflect either positive or negative emotions towards the group. This point becomes particularly salient when drawing conclusions about the participants' gender identification and their behaviour in the lifting/kicking exercise, as high gender identification may not correspond with positive affect, and therefore may not predict positive interaction with, and lifting of, the female candidate. It is possible that, in the present study, the women engaging in distancing/kicking behaviour in the behavioural measure that scored highly in the gender identification measure did so because their score reflected strong negative emotions towards other women rather than positive emotions. Examining the high GID—distancing interaction observed in the current research through the lens of this curvilinear affect—centrality relationship aids in understanding why the present study found the

unexpected and opposite relationship in comparison to previous QB and GID research.

The current study also explored the relationship between gender identification and distancing the self from the group in men. The literature surrounding the QB phenomenon highlights the idea that QB behaviours—such as distancing the self from the gender group and fellow group members—are not inherent to women and are, in fact, a consequence of discrimination and stereotype threat and function as a coping mechanism. Social identity theory supports this idea, as previous research has observed distancing behaviours as a result of negative stereotyping in members of other low-status groups, such as pensioners (Weiss & Freund, 2012; Weiss & Lang, 2012), racial minorities (Cohen & Garcia, 2005; Fordham, 2008), and homosexual men (Clarkson, 2006; Eguchi, 2009; Han, 2009; Hunt et al., 2016).

Considering that men seldom find themselves in a disadvantaged position or facing stereotype threat in the workplace or when pursuing leadership, it is expected that QB behaviours would not be observed in men at work. However, in accordance with previous low-status group research, it is not unreasonable to assume that men may behave in a similar way in a situation whereby males were underrepresented and facing the possibility of negative stereotyping. Therefore, the present research observed male participants in a manipulated leadership context and expected to find the same relationship between GID and lifting/kicking that was expected in female participants (hypothesis 2).

Interestingly, while the relationship in males did not reach statistical significance, the trend observed was similar to female participants—individuals with high gender identification appeared to be more likely to hold back the male candidate compared to their peers with stronger gender identification. This was

the opposite relationship than was expected, and therefore no support for hypothesis 1b was found. Despite this, the findings shed light on the interesting interaction between gender group identification and distancing from the group in males, and several rationales offer explanation and facilitate understanding of these findings.

Firstly, similarly to female participants, the aforementioned frameworks—resistance to engage in radical collective action in high identifiers (Jiménez-Moya et al., 2015) and the curvilinear relationship between group affect and identity centrality (Kachanoff et al., 2016)—both provide insight into the relationship observed in male participants, and aid in the interpretation and explanation of the findings. In addition, the fact that participants were all enrolled in at least one psychology course may have contributed to their interaction with the candidates on the behavioural measure. Specifically, the education of personal biases typically covered in introductory psychology courses may have helped participants to recognise, acknowledge, and adjust their biases in the face of making judgements and decisions involving gender. Thus, this may help to explain why the lifting behaviour observed in this study deviated from previous findings in studies investigating QB responses and attitudes in non-psychology student samples.

Furthermore, the present findings in male participants may be related to the gender inequality context in New Zealand. As discussed previously in this chapter, the current climate regarding gender parity and gender discrimination in New Zealand is considerably more positive than the current climate in the United States. One possible explanation for this difference is the level of awareness concerning gender discrimination and gender inequality. The awareness of social issues revolving around gender, particularly in the workplace, may relate to the

findings in male participants. Specifically, a higher level of awareness of social issues around gender may have influenced the way male participants interacted with the male and female candidates and led to an overcompensation in terms of favouring the female candidate. This rationale is somewhat supported by the data, as the mean score of lifting the same-gender candidate in the male sample is lower than the mean score of lifting in the female sample. These findings suggest that, overall, male participants favoured the female candidate more than the female participants favoured the male candidate, and this could be attributed to the awareness of gender inequality and male participants' attempts at avoiding appearing biased against women. Moreover, this overcompensation may help in explaining why the current findings regarding men deviate from previous findings related to social group distancing.

Supplementary Findings: Exploration of Explicit–Implicit QB Assessment

In order to explore hypotheses 3, 4, and 5, a correlational analysis of the behavioural (implicit) QB measure and the two self-report (explicit) QB measures was conducted. Considering that previous QB research have employed both self-report and behavioural assessment measures, it is important to understand how these measures relate to each other in order to construct a picture of what these measures assess, and whether they are assessing QB attitudes and behaviours in the same manner.

The results of the present research suggest that these explicit measures do not correlate with the behavioural measure employed, supporting hypotheses 2 and 3. This result was consistent across both female and male participants. This specifically suggests that assessing an individual's self-characterisation of their leadership style in terms of masculinity as an indicator of Queen Bee behaviours may not be measuring the same thing as the present behavioural measure.

Similarly, the findings also suggest that assessing an individual's rating of their own career commitment in comparison to their rating of the career commitment of other women, as an indicator of Queen Bee attitudes, may not be measuring the same thing as the behavioural measure employed in this research. These findings offer insight into the Queen Bee phenomenon, and particularly how it is measured, as it poses a question about what these different, commonly employed measures are actually assessing, and whether results from these measures are able to be compared to each other.

It is also important to note that, although not statistically significant, a small positive correlation was observed between the behavioural measure and the career commitment self-report measure. This finding was consistent across female and male participants, and suggests that as participants favoured the candidate from their gender group, they also rated their personal career commitment as higher than that of their same-gendered peers. This was somewhat surprising, as of the two explicit measures, the career commitment measure was assumed to function as indexing distancing from the gender group more than the leadership style measure. However, the correlation analysis revealed that the career commitment measure was related to the behavioural measure in an opposite direction to expected, suggesting that these two distancing measures are not assessing distancing from the group in the same way. This has interesting and important implications for assessing distancing regarding the QB phenomenon, as the present findings suggest that this previously used explicit measure and the presently used behavioural measure are not necessarily interchangeable, and results garnered from employing these measures may not be comparable.

Furthermore, the correlational analysis also revealed no significant relationship between the two explicit QB indicators employed in this study. This

suggests that, as expected, these measures are assessing different facets of Queen Bee behaviours. However, it also suggests that these measures may not relate to each other well, that employing these measures interchangeably in future research assessing the QB phenomenon may not be suitable, comparing results across studies that utilise these measures could be problematic, and that drawing conclusions should be done with caution. Interestingly, the correlational analysis revealed a negative moderate correlation between the two measures in male participants. Specifically, as male participants rated their personal career commitment higher compared to other males, they also indicated that their personal leadership style was more feminine than masculine. This suggests that, not only do these measures not relate in the expected way in males, they may relate in the opposite way. Moreover, these QB indicators may relate to each other more poorly in males than in females, which suggests that the explicit measures employed in this research are not suitable for future research exploring the QB phenomenon in men.

Practical Implications

Although the findings of the present study did not reach statistical significance, the trends observed still offer valuable insight into the relationships between the Queen Bee phenomenon and gender identification, as well as the interaction between QB attitudes and behaviours and cultural context, and the measurement of QB indicators. As a result, the current research provides several practical implications.

Firstly, the failure to find similar results to the study on which this research was based asserts the importance of examining the influence of cultural context on the Queen Bee phenomenon. Considering that the gender inequality climate in New Zealand is substantially more positive than in the U.S. across

several indicators strongly suggests that the engagement in Queen Bee behaviours or attitudes among women across the two countries also differs, which this study supports. The implication of this is that more research concerning the QB phenomenon specifically in New Zealand is essential, in order to understand the extent that this phenomenon acts as a barrier to leadership for women in this country.

Furthermore, the findings call for more research investigating the relationship between gender identification and QB behaviours in women in New Zealand, in order to consolidate and understand the different interactions observed across previous studies. Gaining a deeper and more accurate understanding of this will help to identify whether certain women may be more at risk of engaging in QB behaviours. This will provide an opportunity to develop strategies and training initiatives to help these women cope with the gender discrimination or stereotype threat they will undoubtedly face in their careers, overall aiding women in this country to reach leadership positions and experience more success.

This study also has practical implications regarding the measurement of QB behaviours and attitudes, specifically concerning the use of explicit and implicit measures. The lack of relationships between the explicit and implicit measures in this study, and the lack of a relationship between the two explicit measures call into question the interchangeability of these measures, suggest that caution should be taken when comparing results across studies employing these measures, and question the generalisability of results garnered from these measures when making judgements about the presence of a Queen Bee.

Lastly, this research has implications regarding the value of replication in the field of organisational psychology. There is a lack of replication of studies within industrial/organisational psychological research, with replication studies

making up only 1% of all published psychology research (Makel, Plucker, & Hegarty, 2012). Exploring the reproducibility of psychological studies is important to maintain progress and accuracy (Schmidt & Landers, 2013), and the lack of replication in organisational psychology is a concern, specifically in relation to the trustworthiness and accuracy of findings (Kepes & McDaniel, 2013). The findings of the present study—particularly the replicated aspect and the deviation of the present findings from Kaiser and Spalding’s results—highlight why an increase in replication is essential in organisational psychology, and showcase the insight that can accompany studies of this nature.

Strengths of the Present Study

The current study boasts several strengths. Firstly, it explores the Queen Bee phenomenon and the influence of gender identification on the engagement with QB behaviours in the New Zealand context among young women, of which relatively little research has previously been conducted. The findings suggest that the QB phenomenon and the interaction with gender identification function differently in New Zealand compared to other countries, and supports the notion of further research on the topic in this country.

Secondly, this study employed both explicit and implicit Queen Bee indicators—another relatively uncommon aspect amongst previous research. By incorporating these different methods of assessing the Queen Bee phenomenon, the current study shed light on the discrepancies between explicit and implicit measures and the issues with solely employing explicit, self-report questionnaires in the exploration and investigation of the Queen Bee phenomenon.

Lastly, this research adds to the scarce body of replication studies within psychology, and specifically within the field of organisation/industrial psychology. The fact that the present findings deviate substantially from the

findings of the original research highlight the reason that more replication studies are critical.

Limitations of the Present Study

The current study has several limitations. Firstly, the sample size of both male and female participants was small, and therefore the statistical power of the findings is low. Consequently, the small sample size and low power may have contributed to the lack of any significant findings, and generalisations of the results should be approached with caution.

Secondly, related to the small sample size, the design of the study may have contributed to the small sample size. Specifically, the inclusion of a questionnaire and a complex and involved behavioural exercise meant that the time commitment required of participants was substantial, and considerably greater than the time required for the various other studies they were able to choose to participate in for course requirements. Thus, altering the design to require less time may have helped to recruit a greater number of participants and allowed for more sessions in the allotted data collection period.

Another limitation related to the design of the study was the fact that the explicit measures used in the questionnaire to assess engagement and endorsement of QB indicators were taken from research with only female participants. Therefore, the items in these measures were not specifically tailored to men, which may have influenced the responses of male participants in this study and the findings regarding their engagement with QB indicators.

Furthermore, concerning the behavioural measure, the underrepresentation context may not have been convincing for male participants. Specifically, given the extensive dominance of males in leadership positions in reality, the underrepresentation cues employed in the design of this study may not have been

strong enough to overcome this effect. In light of this, the findings regarding male participants and distancing from the group may not accurately reflect how men would truly behave in the face of stereotype threat or underrepresentation context.

Lastly, despite efforts to disguise the gender-focused nature of this research, participants may have been aware of this focus. Consequently, this may have resulted in participants altering their responses and behaviour in order to appear in a more positive light, and therefore influencing the accuracy of the findings.

Suggestions for Future Research

The findings and limitations of this study have sparked several suggestions for future research. Firstly, further replication of the methodology (specifically the behavioural measure) employed with women in New Zealand would be highly valuable in order to formulate a deeper understanding of the nuanced relationship between gender identification and behaviours indicative of QBs in women, as well as the interaction between the Queen Bee phenomenon and the social climate and culture of New Zealand. Further, ensuring larger sample sizes in future research on this topic would allow for more accurate generalisation of the findings.

Moreover, further work regarding the development of measures indexing gender identification would be useful, so as to enable the assessment of both cognitive and affective facets of the construct and allow for more distinct understandings of an individual's positive or negative affect towards the gender group and how this relates to their identity centrality.

Lastly, future research could incorporate comparison samples of young women attending university and professional women in different stages of their careers. Given the mixed findings across previous research and the varied ages of

samples, as well as the variety of measures used, assessing different samples within the same study and with the same set of measures may elucidate the way the Queen Bee phenomenon functions across a lifetime. Further, given the important role that experiencing gender discrimination plays in the incidence of QBs, examining women prior to starting their careers and drawing comparisons with women early and late in their careers would shed more light on how the workplace functions as a trigger for QB behaviours and attitudes.

Concluding Remarks

To conclude, the present research investigated the Queen Bee phenomenon in young university students in New Zealand and explored the relationships between gender identification–behavioural distancing from the gender group and explicit–implicit assessment measures of Queen Bee behaviours. The paradoxical relationship observed between GID and behavioural distancing demonstrates that cultural context influences the way that the Queen Bee phenomenon functions, and the lack of relationship observed between the implicit and explicit measures demonstrates that caution must be taken when assessing the Queen Bee phenomenon and generalising across methods, samples, and studies. Both findings also highlight the necessity for further research on this topic in New Zealand.

The important potential implication of gaining a deeper understanding of how gender identification interacts with women’s engagement with the QB phenomenon is that if it is possible to ascertain and identify whether certain women are more likely to engage in QB behaviours, strategies and initiatives can be implemented to help women overcome gender discrimination and stereotype threat in more positive and productive ways.

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Appendix A

Participant Information Sheet – Leadership Attitudes and Workgroup Behaviours

The goal of this study is to explore workgroup behaviours and attitudes towards leadership held by university students within New Zealand. Strides have been made over the last decade regarding diversity within leadership positions in the business world, however it is important to continually measure attitudes related to diversity of leaders. This research aims to gain an understanding of the current attitudes that university students hold about the age, gender, and ethnicity of leaders, as well as students' behaviour within a workgroup of their peers.

This lab session will consist of a short questionnaire, followed by two tasks related to workgroup behaviour. Specific instructions regarding the session and the required tasks will be provided to you on arrival at the lab session. We are interested in your honest attitudes and request that you answer all questions as truthfully as possible. There are no right or wrong answers (with the exception of one of the tasks), and your responses will remain anonymous. Responses will be coded, and codes will not be linked to names in any way. You can withdraw from this study at any point for any reason. You will be participating in a lab session alongside two other participants. However, participants will have no direct contact with each other and no identifying information will be shared with the other participants in your session. Therefore, anonymity is ensured.

This study is being conducted as part of a Master of Applied Psychology research thesis and has received ethical approval from the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences. It is important to note that this study involves minor concealment that will not result in harm to participants in any way and is unlikely to deter participants from participating. The full nature and purpose of the study will be disclosed once you have completed the study. Any questions about the ethical conduct of this research may be sent to the convener of the Research and Ethics Committee (currently Dr. Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz). If you would like any further information about the study, please contact myself (Courteney van Lieshout, courtney.van@live.com) or the research supervisors (Dr. Maree Roche, mroche@waikato.ac.nz or Dr. Anna Sutton, anna.sutton@waikato.ac.nz).

Appendix B

A completed copy of this form should be retained by both the researcher and the participant.

Research Project: Students' workgroup behaviours and attitudes towards leadership

Please complete the following checklist. Tick (✓) the appropriate box for each point.	YES	NO
1. I have read the Participant Information Sheet (or it has been read to me) and I understand it.		
2. I have been given sufficient time to consider whether or not to participate in this study		
3. I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet		
4. I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without penalty		
5. I have the right to decline to participate in any part of the research activity		
6. I know who to contact if I have any questions about the study in general.		
7. I understand that the information supplied by me could be used in future academic publications.		
8. I understand that this study involves minor concealment and that the full nature and purpose of the study will be explained to me during the debrief		
9. I understand that my participation in this study is anonymous, and that no identifying information will be linked to coded responses.		
10. I wish to receive a copy of the findings. Email address:		

Declaration by participant:

I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee (Dr Rebecca Sargisson, phone 07 837 9580, email: rebecca.sargisson@waikato.ac.nz)

Participant's name (Please print):

Signature:

Date:

Declaration by member of research team:

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it. I believe that the participant understands the study and has given informed consent to participate.

Researcher's name (Please print):

Signature:

Date:

Appendix C
DEMOGRAPHIC PROFILE AND LEADERSHIP AND WORKGROUP QUESTIONNAIRE

This section requires that you fill out a demographic profile and a questionnaire assessing your attitudes towards leadership and workgroup situations. We are interested in your honest opinions, and there are no right or wrong answers. Please answer all questions truthfully. The responses you provide in the demographic section will be used to generate your demographic profile which will be shown to the other two participants taking part in this study in the same session as you. No identifying information (such as names or university ID numbers) will be shared with the other participants. Furthermore, your responses to the attitude questionnaire will not be seen by anyone except the researcher and research supervisors.

Which gender do you identify with? Male Female Prefer to self-describe: _____

What is your age? _____

Which ethnicity/ethnicities do you identify with?

New Zealand European

Other European

Maori

Pacifica

Chinese

Indian

Other (please specify): _____

Prefer not to answer

What is your enrolment status at the University of Waikato?

Full-time student

Part-time student

What degree are you currently studying towards? _____

What is/are your major(s)? _____

What is your current employment status?

Unemployed	Self-employed	Part time (less than 30 hours/week)	Full time (more than 30 hours/week)
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Please indicate which industry sectors you have worked in:

Accountancy, Banking, or Finance	Business, Consulting, or Management	Agriculture, Horticulture, or Forestry		
Creative Arts and Design	Construction or Property	Education and Training		
Electricity, gas, water, and waste services	Healthcare	Hospitality or Event Management		
Information communications and technology	Law	Law Enforcement or Security		
Manufacturing	Media or Internet	Professional, Scientific, and Technical services	Retail	I

have not been in paid employment

Other (Please Specify): _____

The following questions will measure your attitudes and beliefs towards leadership styles and behaviours within a workgroup situation. Please read each statement and indicate how strongly you agree or disagree. There are no right or wrong responses, and the best answer to each question is your true and honest opinion. Please respond to all items.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
The development community should someday accept women in key managerial positions.							
I often consider what I can do to advance in my field.							
I prefer to listen to the contribution of others in a discussion rather than put forward my own ideas.							
I often contribute original ideas.							
I prefer the members of my group to be younger than me.							

I avoid getting involved in conflict within a group.							
I consider myself an intelligent leader.							
Society should regard work by female managers as valuable as work by male managers.							
Men and women should be given equal opportunity for participation in management training programs.							
I use humour to ease tensions and maintain good relationships within the group.							
Challenging work is more important to men than it is to women.							
All ethnicities should be given equal opportunity for participation in management training programs.							

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
The average male employee finds it important to be successful at work.							
On average, younger managers are less capable of contributing to an organisation's overall goals than are older managers.							
I consider myself a charismatic leader.							
Women have the objectivity required to evaluate business situations properly.							
Women cannot be aggressive in business situations that demand it.							
I urge team members to stick to plans and schedules in order to meet deadlines.							
Women are not competitive enough to be successful in the working world							

To be a successful executive, a woman does not have to sacrifice some of her femininity.							
It is not acceptable for women to assume leadership roles as often as men.							
I feel strong ties to other members of my gender group							
I enjoy taking on a leadership role when in a group situation.							
It is less desirable for women than for men to have a job that requires responsibility.							
I develop team members' ideas so that they improve.							
Women possess self-confidence required of a good leader.							
I consider myself a compassionate leader.							
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

I consider myself a caring leader.							
The average female employee finds it important to be successful at work.							
I actively seek opinions from other people.							
Problems associated with menstruation should not make women less desirable than men as employees.							
Women cannot be assertive in business situations that demand it.							
I would rather work in a group with members from different professional fields.							
It is important to me to be successful in my job and career.							
Challenging work is more important to younger workers than it is to older workers.							
I consider myself an understanding leader.							
I tend to seek approval and support from my team members.							

I am like other members of my gender group.							
I prefer to work in a group with people who are the same age as me.							
It is acceptable for women to compete with men for top executive positions.							
At work, being a woman/man is important to me							
Women have the capability to acquire the necessary skills to be successful managers.							
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
Younger workers cannot be aggressive in business situations that demand it.							
Gender has nothing to do with whether people are good leaders at work.							

I prefer to work in a group with people of the same ethnicity as me.							
Overall, my gender is an important part of my self-image							
On average, a woman who stays at home all the time with her children is a better mother than a woman who works outside the home at least half the time.							
I consider myself a sensitive leader.							
I would rather work in a group with members studying in the same field as me.							
I enjoy working with both men and women equally.							
I can quickly recognise issues and suggest solutions.							
Women are less capable of learning mathematical and mechanical skills than are men.							

It is good that organisations are taking action to improve women's chance at leadership positions at work.							
I am careful not to jump to conclusions quickly.							
I consider myself a determined leader.							
On average, women managers are less capable of contributing to an organisation's overall goals than are men.							
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
I feel connected to other members of my gender group at work							
Women are not ambitious enough to be successful in the working world.							
Older workers are not ambitious enough to be successful in the working world.							

Women would no more allow their emotions to influence their managerial behaviour than would men.							
Women are not ambitious enough to be successful in the working world.							
I consider myself a dedicated leader.							
The average man often considers what he can do to advance in their job.							
I press for action to make sure people don't waste time.							
The average woman often considers what she can do to advance in their job.							
When there are different opinions within a group, I encourage people to talk their differences through to a consensus.							
The possibility of pregnancy does not make women less desirable employees than men.							
I do not care whether my supervisor is male or female.							

I prefer to work in a diverse group with different ethnicities represented.							
I identify with other members of my gender group.							
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
My gender group is an important reflection of who I am.							
Women cannot be assertive in business situations that demand it.							
I prefer the members of my group to be older than me.							
I am good at noticing when a group member is feeling upset.							

Appendix D

Profile 1a

Name: James Hansen

Age: 20

Gender: Male

Current Degree: Bachelor of Arts

Year: 1

Major: psychology, English

Current Employment Status: Part-time

Previous job: Hospitality

Approach to leading a team: I would take charge of the group and keep them on track, and come up with lots of ideas

Profile 2a

Name: Lisa Calderon

Age: 19

Gender: Female

Current Degree: Bachelor of Social Sciences

Year: 1

Major: psychology, sociology

Current employment status: part-time

Previous Job: Retail

Approach to leading a team: I would listen to ideas from everybody, seek others' opinions, and avoid any group conflict

Profile 1b

Name: James Hansen

Age: 19

Gender: Male

Current Degree: Bachelor of Social Sciences

Year: 1

Major: psychology, sociology

Current employment status: part-time

Previous Job: Retail

Approach to leading a team: I would listen to ideas from everybody, seek others' opinions, and avoid any group conflict

Profile 2b

Name: Lisa Calderon

Age: 20

Gender: Female

Current Degree: Bachelor of Arts

Year: 1

Major: psychology, English

Current Employment Status: Part-time

Previous job: Hospitality

Approach to leading a team: I would take charge of the group and keep them on track, and come up with lots of ideas

Appendix E

Management Aptitude Test

This simple test has been designed to assess your aptitude for management roles in order to determine which of you will be selected to undertake the Manager position for the remainder of this exercise. Attaining the Manager role will provide you with an advantage later on in the session. This test contains two parts. The first part is a problem-solving task which requires you to read a scenario in which you are stranded in the wilderness and select a variety of items which will aid in your survival. The second part of the assessment contains a small selection of brain-teaser questions in order to test your critical and creative thinking skills. Please give your best effort in this test so the most capable man is selected for the role. Good Luck!

Exercise 1: Wilderness Survival Task

You have just crash landed somewhere in a forest in the South Island of New Zealand. It is 11:32 am in mid-July. The small plane in which you were travelling crashed onto a small lake. The pilot and co-pilot were killed. Shortly after the crash, the plane sank completely into the lake with the pilot and co-pilot's bodies inside. Everyone else on the flight escaped to land dry and without serious injury.

The crash came suddenly before the pilot had time to radio for help or inform anyone of your position. Since he was trying to avoid the storm, you know the plan was considerably off course. The pilot announced shortly before the crash that you were 70 kilometres northwest of a small town that is the nearest known habitation.

You are in a wilderness area made up of several lakes and rivers. The snow depth varies from above the ankles in windswept areas to more than knee deep where it has drifted. The last weather report indicated that the temperature would reach -4 degrees in the daytime and -12 degrees at night. There is plenty of dead wood and twigs in the area around the lake. You and the other surviving passengers are dressed in winter clothing appropriate for city wear — suits, pantsuits, street shoes and overcoats. There are 10 people that survived the flight safely, and you have all agreed to stay together.

While escaping from the plane, your group salvaged 12 items listed below:

Ball of steel wool

Pack of men's razors

Compass

Hand axe

Cigarette lighter without fluid

Loaded .45-calibre pistol

Waterproof section aerial map

One 20-by-20-foot piece of heavy-duty canvas

One men's sweatshirt, size large

One quart of whiskey

One family-size chocolate bar

One bottle of men's cologne

Your task is to select 5 items from the list above that you consider to be the most important for yours and your group's survival. For each item chosen, provide a short explanation (no more than 2 sentences) as to why you have selected this item and/or how it will aid in the survival of the group.

You will be given 10 minutes to complete this exercise, and your answers will be marked according to the answers provided by survival experts.

Exercise 2: Brainteaser Questions

These questions are designed to test your creative and critical thinking. Please try and provide an answer for each question, even if you are not sure.

1. Johnny's mother has three children. The first child was named April, the second was child was named May. What the third child's name?
2. Before Mt. Everest was discovered, what was the highest mountain in the world?
3. How much dirt is there in a hole that measures 1 metre by 3 metres by 4 metres?
4. In New Zealand, you cannot take a picture of a man with a prosthetic leg. Why not?
5. A patch of lily pads float in a lake. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?
6. You wake up one morning and there's been a power outage. You know you have 12 black socks and 8 blue ones. How many socks do you need to pull out before you've got a match?
7. If it takes 5 machines 5 minutes to make 5 men's shirts, how long would it take 100 machines to make 100 men's shirts?

Appendix F

Management Aptitude Test

This simple test has been designed to assess your aptitude for management roles in order to determine which of you will be selected to undertake the Manager position for the remainder of this exercise. Attaining the Manager role will provide you with an advantage later on in the session. This test contains two parts. The first part is a problem-solving task which requires you to read a scenario in which you are stranded in the wilderness and select a variety of items which will aid in your survival. The second part of the assessment contains a small selection of brain-teaser questions in order to test your critical and creative thinking skills. Please give your best effort in this test so the most capable woman is selected for the role. Good Luck!

Exercise 1: Wilderness Survival Task

You have just crash landed somewhere in a forest in the South Island of New Zealand. It is 11:32 am in mid-July. The small plane in which you were travelling crashed onto a small lake. The pilot and co-pilot were killed. Shortly after the crash, the plane sank completely into the lake with the pilot and co-pilot's bodies inside. Everyone else on the flight escaped to land dry and without serious injury.

The crash came suddenly before the pilot had time to radio for help or inform anyone of your position. Since she was trying to avoid the storm, you know the plan was considerably off course. The pilot announced shortly before the crash that you were 70 kilometres northwest of a small town that is the nearest known habitation.

You are in a wilderness area made up of several lakes and rivers. The snow depth varies from above the ankles in windswept areas to more than knee deep where it has drifted. The last weather report indicated that the temperature would reach -4 degrees in the daytime and -12 degrees at night. There is plenty of dead wood and twigs in the area around the lake. You and the other surviving passengers are dressed in winter clothing appropriate for city wear — suits, pantsuits, street shoes and overcoats. There are 10 people that survived the flight safely, and you have all agreed to stay together.

While escaping from the plane, your group salvaged 12 items listed below:

Ball of steel wool

Pack of women's razors

Compass

Hand axe

Cigarette lighter without fluid

Loaded .45-calibre pistol

Waterproof section aerial map

One 20-by-20-foot piece of heavy-duty canvas

One women's sweatshirt, size medium

One quart of whiskey

One family-size chocolate bar

One bottle of women's perfume

Your task is to select 5 items from the list above that you consider to be the most important for yours and your group's survival. For each item chosen, provide a short explanation (no more than 2 sentences) as to why you have selected this item and/or how it will aid in the survival of the group.

You will be given 10 minutes to complete this exercise, and your answers will be marked according to the answers provided by survival experts.

Exercise 2: Brainteaser Questions

These questions are designed to test your creative and critical thinking. Please try and provide an answer for each question, even if you are not sure.

1. Bethany's mother has three children. The first child was named April, the second was child was named May. What the third child's name?
2. Before Mt. Everest was discovered, what was the highest mountain in the world?
3. How much dirt is there in a hole that measures 1 metre by 3 metres by 4 metres?
4. In New Zealand, you cannot take a picture of a woman with a prosthetic leg. Why not?
5. A patch of lily pads float in a lake. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?
6. You wake up one morning and there's been a power outage. You know you have 12 black socks and 8 blue ones. How many socks do you need to pull out before you've got a match?
7. If it takes 5 machines 5 minutes to make 5 women's shirts, how long would it take 100 machines to make 100 women's shirts?

Appendix G

Candidate 1:

1. Laverne, shove the dead guy — Return of the Jedi
 - a. It's the third in a series
 - b. Try using the force to get this movie title
 - c. It's an outer space movie
2. Spit paint over kill the bat shady wings — it ain't over till the fat lady sings
 - a. Reminds athletes to not give up too soon
 - b. It's actually about opera, but you hear it during sports
 - c. It gets quoted at sporting events
3. Dinkle wrinkled in a car — twinkle, twinkle, little star
 - a. Get out your telescope for this childhood song
 - b. But they aren't Lucy
 - c. They're like diamonds in the sky
4. Make miss slob hand glove grit — take this job and shove it
 - a. You might say it when quitting your job
 - b. It's a song and a movie
 - c. It's about one's occupation
5. Pin face of tire fake grass — in case of fire, break glass
 - a. Do it in the event of fire!
 - b. It's on a sign in buildings
 - c. This is what you should do in an emergency
6. Ape any safe diss ape any herved — A penny saved is a penny earned
 - a. Don't spend money
 - b. Saving money is always worth it
 - c. Even saving small coins makes a difference to your finances

Candidate 2:

7. Streak-plow your sore, never scold your niece — Speak now or forever hold your piece
 - a. You often hear this during a wedding ceremony
 - b. This is not the time to be shy
 - c. You might hear this in a church
8. A burly word frets la firm — the early bird gets the worm
 - a. Don't get caught napping
 - b. If you wake up, there's a disgusting surprise for you
 - c. The first to wake up gets the prize
9. Paul's well. Pat sends smell — All's well that ends well
 - a. It's a well-known cliché
 - b. It's all OK if it ends OK
 - c. It's a Shakespeare play
10. Wife is right the fox love taco bits — Life is like a box of chocolates
 - a. You never know what you're going to get
 - b. It's a saying about taking your chances
 - c. It's a stupid saying from a Tom Hanks film
11. Very scary tight-fun berry — Mary, Mary, quite contrary
 - a. There's a girl who gardens
 - b. It's from a nursery rhyme
 - c. How does her garden grow?
12. Hood the yings commence maul Pa cages — Good things come in small packages
 - a. You might want something bigger
 - b. Little doesn't equal bad
 - c. Remember that size doesn't indicate value